RAFAL'KES, S. B., SURIS, A. S.

Endocarditis

Early manifestation of septic endocarditis complicating puerperal fever.
Klin. med. 30, No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

RAFAL'KES, S. M., SURIS, A. S.

Puerperal Septicemia

Early manifestation of septic endocarditis complicating puerperal fever.
Klin. med. 30 No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. Unclassified.

RAFAL'KES, Solomon Borisovich, 1892-

Puerperal infections and diseases

1. Puerperal septicemia.

RAFALSKI, A.

The first balance of the District Association of Township Cooperatives. p. 5. GOSPODARKA ZBOZOWA. Vol. 9, No. 3, Jan 1956 Warszawa.

East European Accessions List (EEAL) Library of Congress Vol. 5, No. 11, August 1956

RAFALOV, M.M., inzh.; SHTUL'BERG, B.M., inzh.

Comparing technical and economic indices of various types of overhead push conveyors. Mekh. i avtom. proizv. 19 no.5:39-45 My '65. (MIRA 18:11)

[redacted],

"[illegible] Possible [illegible] Foot-and-Mouth Disease [illegible] Chloroform Vaccine". Rev. veterin., 1955, No. 5.

RAFALOVICH, A.

Mine equipment is being improved. Mast.ugl.5 no.3:23-24 Mr '56.
(MLRA 9:7)

1.Direktor Kopeyskogo mashinostroitel'nogo zavoda imeni S.M. Kirova.

(Coal mining machinery)

S/123/61/000/002/008/017
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1961, No. 2, p. 17, # 2V130

AUTHORS: Levin, M. Z., Shumilov, K. D., Leshchinskiy, M. F., Rafalovich, A. I., Dobronog, S. N.

TITLE: The Determination of the Pressures on the Rolls and the Power of the Motor of Roll-Straightening Machines

PERIODICAL: "Tr. Donetsk. industr. in-ta", 1959, No. 36, pp. 5-27

TEXT: Formulae are presented for determining the bending moments, the radii of curvature, the pressure on the rolls, and the power of the motor. A method is given for verifying the calculation formulae by the investigation of the straightening process of 8-20 mm thick sheets on a 7-roll plate-straightening machine. It is suggested to make more precise the calculation of roll-straightening machines by determining the power consumed by each roll to straightening a strip. The power is calculated from the total curvature (removable curvature + curvature of deflection); hereat, the deflection curvature is determined from the experimental magnitude of the depth of curvature, under the assumption that the bent axis of

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S/123/61/000/002/008/017
A005/A001

The Determination of the Pressures on the Rolls and the Power of the Motor of Roll-Straightening Machines

the strip section being straightened by the roll is a circular arc. It is mentioned that the straightening energy is required to both the plastic and elastic deformation of the strip; therefore, the calculation of the power without allowance for the elastic deformation work will be wrong. - There are 9 figures, 2 tables, and 1 reference.

Yu. Semenenko

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

RAFALOVICH, I. I.

Normativy oborotnykh sredstv i bankovskoe kreditovanie predpriiatii, proektov, i predpriiatii morskogo flota. [The revolving funds and banking credits of ship building projects, parts and enterprises of the merchant marine]. Moskva, Morskoi transport 1943.39p. (Bibliotechka po ekonomicheskomu obrazovaniiu dlia komandira morskogo flota). DLC: HE247.R3

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress Reference Department, Washington, 1952, Unclassified.

ROYKH, I.L.; RAFALOVICH, D.M.; FRUMKIN, A.N., akademik.

Photoactive particles emitted by metals during atmospheric corrosion. Dokl.AN SSSR 90 no.4:603-606 Je '53. (MLRA 6:5)

1. Akademiya Nauk SSSR (for Frumkin). (Photochemistry) (Corrosion and Anticorrosives)

ROYKH, I.L. (Odessa); RAFALOVICH, D.M. (Odessa)

Production of H_2O_2 by metals as a criterion of atmospheric corrosion [with summary in English]. Zhur. fiz. khim. 31 no.12:2733-2738 D '57. (MIRA 11:4)

1.Odesskiy tekhnologicheskiy institut im. I.V. Stalina.
(Zinc--Corrosion) (Aluminum--Corrosion) (Hydrogen peroxide)

AUTHORS: Roykh, I.L., Rafalovich, D.M.

TITLE: Separation of H_2O_2 by Metals as Criterion of Atmospheric Corrosion (Vydeleniye H_2O_2 metallami kak kriteriy atmosfernoy korrozii).

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 12, pp.2733-2738 (USSR)

ABSTRACT: The effect of the decrease of optical density for the investigation of the temporal dependence of the H_2O_2 separation by metals after purification, as well as for the comparison with the data obtained with the investigation of the kinetics of corrosion according to the weight method was applied here. The tests showed that the amount of this effect depends on the exposure time of the preceding exposure. For investigating this dependence, strips parallel to each other of one and the same photographic plate at constant illumination were exposed during various times. Subsequently, a newly cleaned zinc rod was fixed on the photographic layer vertical to these strips. The optical densities D_1 (there, where the metal was), and D (of the remaining part of the plate) were measured for each strip after developing and the Δ D, the decrease of optical density, was computed. The investigations showed the same course of the curves for the action of metal and H_2O_2. This proves that the effect of a decrease in optical density on the newly cleaned metal depends on the separation of hydrogen

Card 1/2

Separation of H_2O_2 by Metals as Criterion of Atmospheric Corrosion

76-12-20/27

peroxide at atmospheric corrosion. Curves for the separation of hydrogen peroxide by newly purified aluminum and zinc were plotted for the intervals from 1 up to 10 days. These curves plotted photographically coincide with those for the increase of the thickness of the layer of oxide, which were obtained by Vernon Refs.6-7 according to the weight method. It is shown that various equations which express the dependence with respect to time of the separated quantity of hydrogen peroxide, or of the thickness of the layer of oxide respectively, correspond to the various stages of metal oxidation. The tests were carried out at 20° C and a relative humidity of from 65 to 75%. From the obtained data results that a parabolic relation of the form $n^2=k_3 t+k_4$ exists with an interval of from 1 to 24 hours from the beginning of oxidation. The analogous tests within the interval of from 1 to 10 days showed a logarithmic course of the dependence of the form: $n=k_5 \lg t + k_6$. There are 7 figures, and 7 references, 4 of which are Slavic.

ASSOCIATION: Odessa Institute of Technology imeni I.V.Stalin (Odesskiy tekhnologicheskiy institut im. I.V.Stalina).

SUBMITTED: October 5, 1956

AVAILABLE: Library of Congress

Card 2/2

Separation of H_2O_2 by Metals as Criterion of Atmospheric Corrosion

76-12-20/27

peroxide at atmospheric corrosion. Curves for the separation of hydrogen peroxide by newly purified aluminum and zinc were plotted for the intervals from 1 up to 10 days. These curves plotted photographically coincide with those for the increase of the thickness of the layer of oxide, which were obtained by Vernon Refs.6-7 according to the weight method. It is shown that various equations which express the dependence with respect to time of the separated quantity of hydrogen peroxide, or of the thickness of the layer of oxide respectively, correspond to the various stages of metal oxidation. The tests were carried out at 20° C and a relative humidity of from 65 to 75%. From the obtained data results that a parabolic relation of the form $n^2=k_3 t+k_4$ exists with an interval of from 1 to 24 hours from the beginning of oxidation. The analogous tests within the interval of from 1 to 10 days showed a logarithmic course of the dependence of the form: $n=k_5 \lg t + k_6$. There are 7 figures, and 7 references, 4 of which are Slavic.

ASSOCIATION: Odessa Institute of Technology imeni I.V.Stalin (Odesskiy tekhnologicheskiy institut im. I.V.Stalina).

SUBMITTED: October 5, 1956

AVAILABLE: Library of Congress

Card 2/2

ROYKH, I.L.; RAFALOVICH, D.M.

Double replacement phenomena in the action of freshly polished metals on photosensitive layers. Ukr. khim. zhur. 24 no. 2:198-201 '58. (MIRA 11:6)

1. Odesskiy tekhnologicheskiy institut im. Stalina, kafedra fiziki.
(Metals--Corrosion)
(Photographic chemistry)

The effect of relative humidity ....

in corrosion was observed after attaining "critical humidity". This increase was explained by the formation of an electrolyte film on the surface, effecting a change from pure chemical to electrochemical corrosion. In prior investigations (Ref. 7: DAN SSSR, 90, 603, 1953; Ref. 8: DAN SSSR, 94, 1117, 1954; Ref. 9: DAN SSSR, 108, 1102, 1954; Ref. 10: ZhFKh, 31, 2733, 1957) the present authors observed the photographic effect of metals caused by the evolution of H_2O_2 during corrosion. Subsequent experiments showed a linear function between the growth of the oxide film and the amount of H_2O_2 formed in atmospheric corrosion of magnesium and aluminum. Thus corrosion can be controlled by estimating the H_2O_2 evolution process. This was the principle of the present investigation. Spectrally pure aluminum (Si 0.0016 %, Fe 0.0016 %, Cu 0.001 %) and magnesium (Fe 0.004 %, Si 0.009 %, Mn 0.0021 %) were used in the experiments and no agressive media were introduced. The photographs were made with isochromatic reproduction supercontrast photoplates (sensitivity 1.4 ГОСТ (GOST)). Blackening increased by preparing the plates successively with 4 % Na_2CO_3 solution (4 minutes) and 50 % ethanol (1 minute) with subsequent drying (10 minutes) at 100°C. Constant humidity φ was secured by placing a NaOH solution of a corresponding concentration (c_{NaOH} = 48, 41, 33, 27, 13 % corresponds to φ = 15, 30, 45, 60, 75, 90 %)

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The effect of relative humidity ....

on the bottom of the cylindrical hermetically closed glass box, where the experiments were carried out. After exposure to the H_2O_2 evolved by the sample at a certain humidity in the test box, the photoplates were developed and the optical density D of the blackening was determined. The dependence of the optical density D of the photoplate blackening after exposure to a solution of H_2O_2 of a certain concentration at a certain humidity was determined and corresponding curves were plotted. From these curves and values obtained with metals the dependence of the evolved H_2O_2 amount p on was estimated (Figure 4). The observed increase in p with is in agreement with literature data (Ref. 1,2,4) indicating an increase in the oxide film with increasing . In the present investigations also the amount p of H_2O_2 evolved from the metals during corrosion at varying was determined and the results are shown in Figure 5, demonstrating that for = 0 - 90 %, log p = a + b (where a and b are different for the interval 0 - 30 % and for 30 - 90 %). These results are in agreement with data given by N., D. Tomashov and A. A. Lokotilov (Ref. 15: Sb. "Korroziya i zashchita staley" ("Corrosion and protection of steel") Mashgizdat 158, 1959). Kinetics of H_2O_2 evolution were studied during the first 6 hours of corrosion for = 0,15, 30, 45 and 60 %. The amount of H_2O_2 formed during the first 15 minutes was considered as unit in these experiments. The obtained results plotted in squares of the formed H_2O_2

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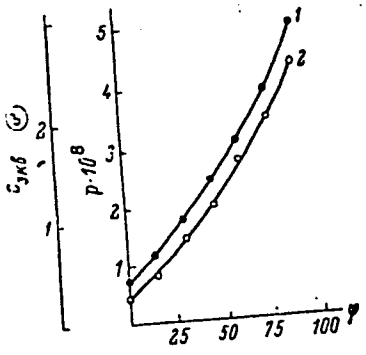
The effect of relative humidity ....

amount versus corrosion time are shown in Figures 8, 9. For φ = 60 % the parabolic equation $p^2 = kt$ (2) is valid while for φ < 60 % the function shows two segments. Approximately for 0 - 3 hours of corrosion equation (2), and for 3 - 6 hours equation $p^2 = k_1 t + k_2$ (3) is valid. There are 9 figures and 15 references: 12 Soviet-bloc and 3 non-Soviet-bloc.

SUBMITTED: August 1, 1960

Figure 4: Dependence of the amount ($p \cdot 10^8$, g/cm^2) and concentration (c_{equiv} %) of hydrogen peroxide evolved from the metals during the first 15 minutes of oxidation on relative humidity φ (%). 1 - magnesium, 2 - aluminum, 3 - c_{equiv}.

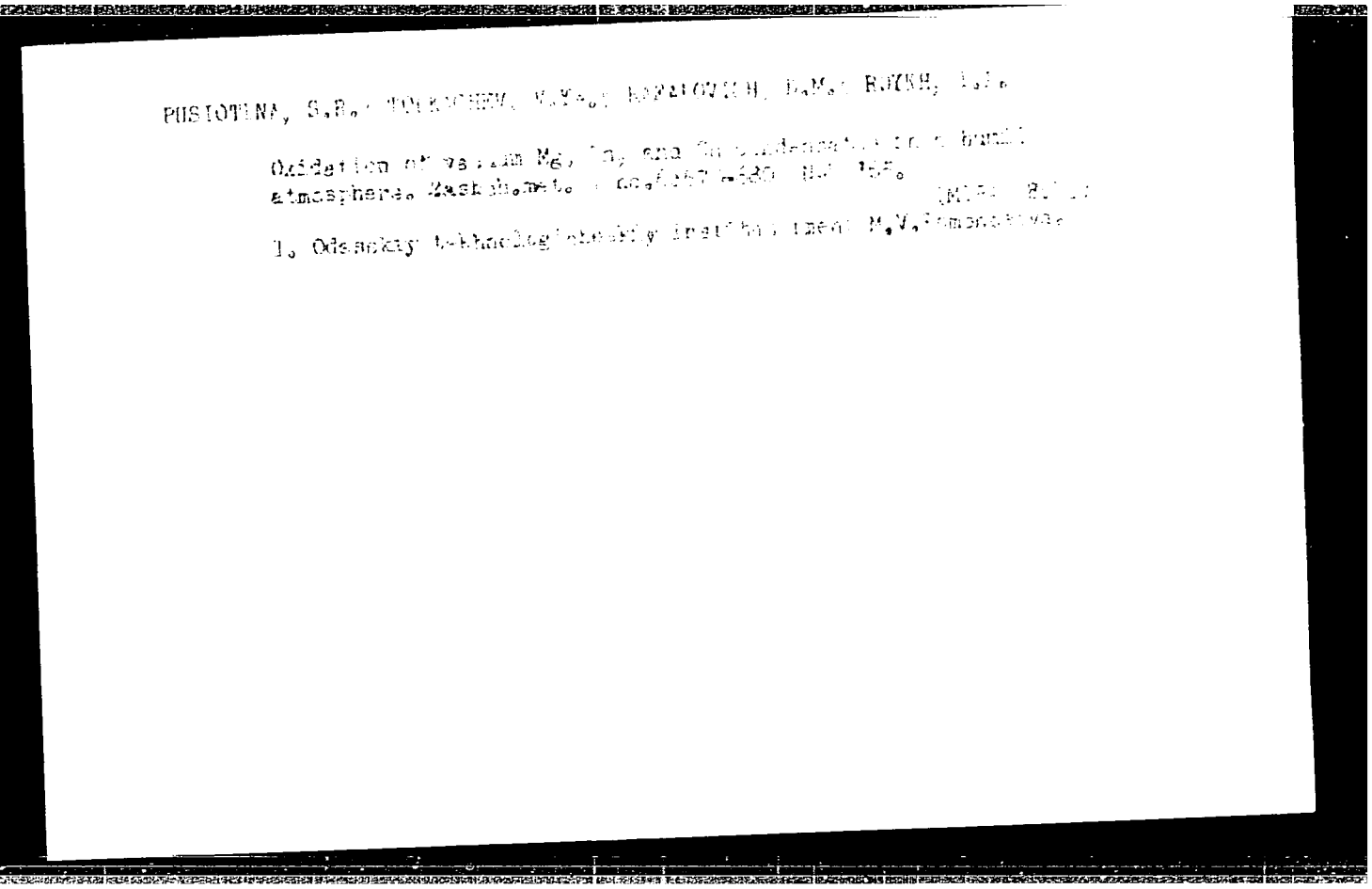


Card 4/6

ROYEH, L.I.; RAFALOVICH, D.M.

Relation between the weight increase of the oxide film and the amount of H_2O_2 evolved in the atmospheric corrosion of magnesium. Zhur. fiz. khim. 36 no.6:1198-1201 Je '62 (MIRA 17:7)

1. Odesskiy tekhnologicheskiy institut.



L 46996-66 EWP(j)/EWT(m)/T IJP(c) RM/WW

ACC NR: AP6027287 (A) SOURCE CODE: UR/0191/66/000/008/0072/0073

38
36
B

AUTHOR: Kononchik, Ye. T.; Rafalovich, D. M.; Roykh, I. L.

ORG: none

TITLE: Oxidation of polymers in air during mechanical degradation

SOURCE: Plasticheskiye massy, no. 8, 1966, 72-73

TOPIC TAGS: peroxide, polyethylene, polystyrene, polycaprolactam, polymer degradation

ABSTRACT: The mechanical degradation of polymers may cause chemical reactions which evolve volatile substances, in particular, peroxy compounds. A photographic method was used to study the amount of volatile substances evolved during the mechanical degradation of low-pressure polyethylene, polystyrene, polycaprolactam and vulcanized rubber in air. The substances evolved caused a darkening on a photographic plate when it came in contact with its emulsion, and the degree of darkening was proportional to the amount of the substance. The composition of the volatile substances was identified by means of chemical indicators commonly employed for H_2O_2 and by a luminescent method (luminol). The liberated organic peroxides (tert-butyl peroxyacetate, tert-butyl peroxybenzoate, caproic peroxide, tert-butyl hydroperoxide and cumene hydroperoxide) had the same effect on the chemical and luminescent indicators as did H_2O_2 and, like the latter, darkened the photographic plate. Teflon samples

Card 1/2 UDC: 678.019.31 : [678.742.2+678.746.22+678.675'126+678.44

ACC NR: AP6027287

did not darken the photographic plate, indicating that hydrogen atoms must be available in the polymer for peroxides to be formed. Authors thank S. Ye. Bresler and P. Yu. Butyagin for their participation in the discussion of the results. Orig.art. has: 3 figures.

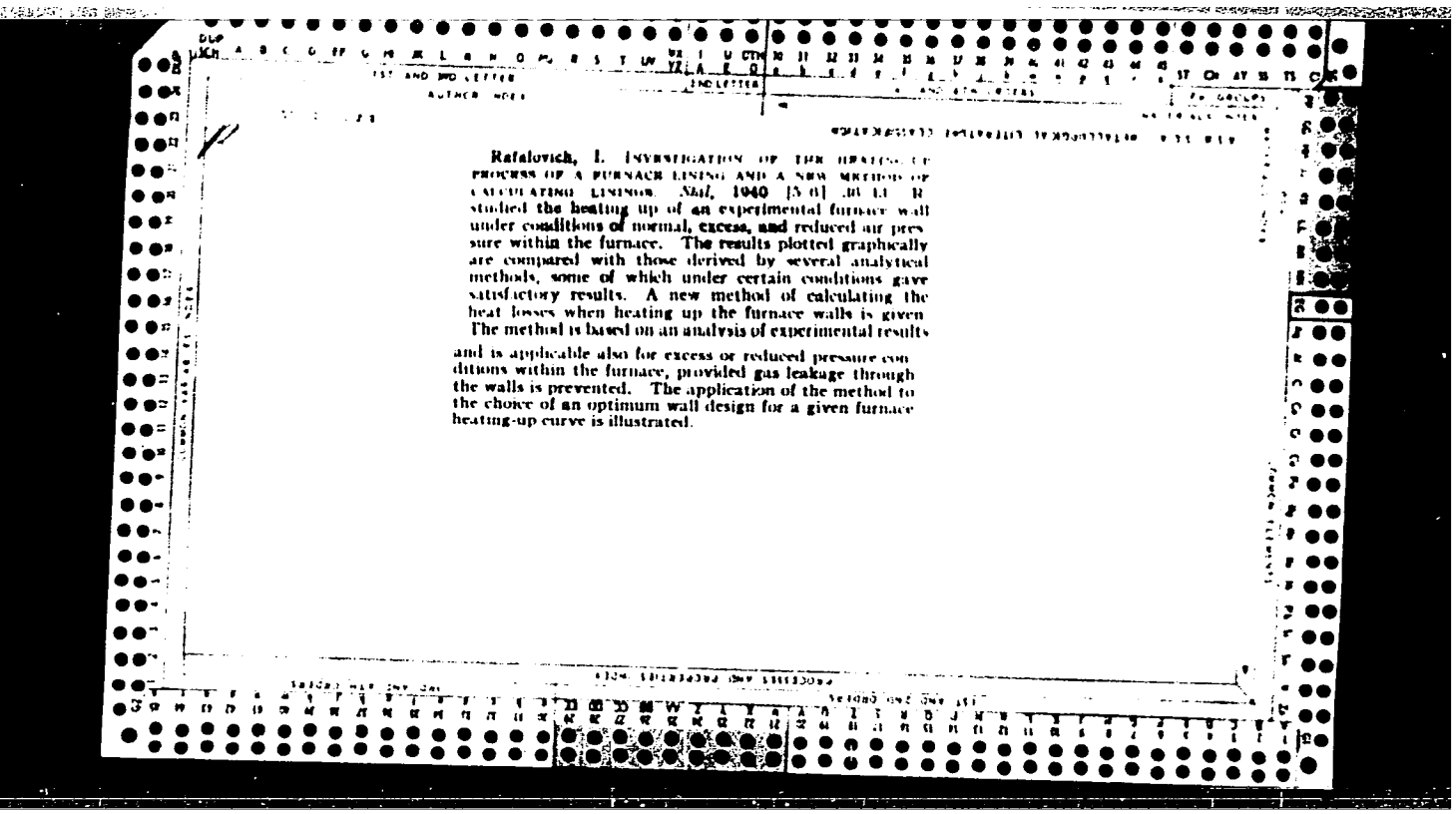
SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

Card 2/2

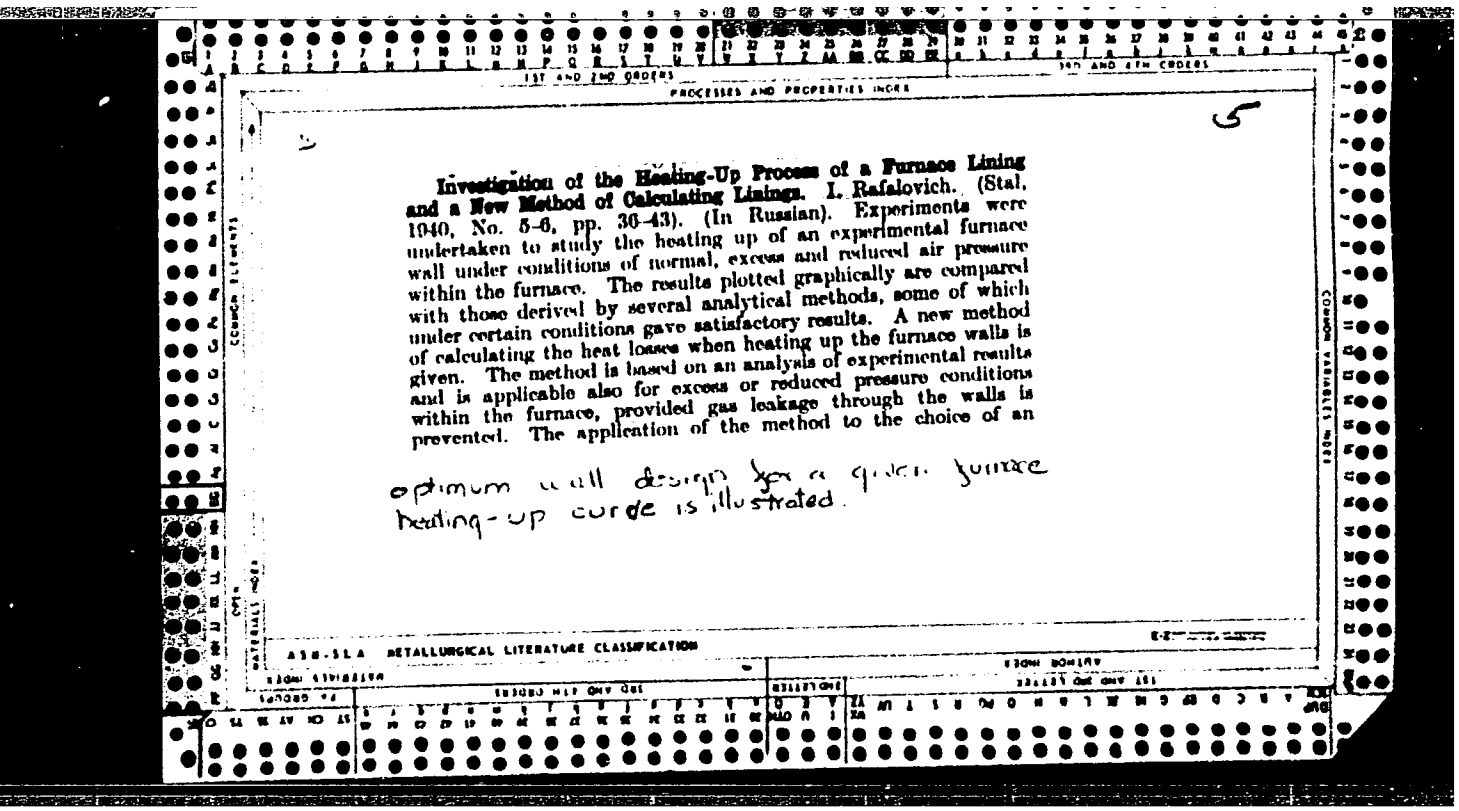
DOMBROVSKA-GAVDA, H. [Dabrowska-Gawda, H.]; RAFALOVICH, E. [Rafalowicz, E.]; SULKOVSKI, Ch. [Sulkowski, Cz.]

Measurement of the specific strength of threadlike single crystals (whiskers) of copper depending on temperature. Acta physical Pol 23 no.6:663-672 Je '63.

1. Kriogennaya Laboratoriya Polskoy Akademii Nauk, Vrotslav.



Rafalovich, I. INVESTIGATION OF THE HEATING UP PROCESS OF A FURNACE LINING AND A NEW METHOD OF CALCULATING LOSSES. *Stal*, 1940 [5-6] 101-11. R studied the heating up of an experimental furnace wall under conditions of normal, excess, and reduced air pressure within the furnace. The results plotted graphically are compared with those derived by several analytical methods, some of which under certain conditions gave satisfactory results. A new method of calculating the heat losses when heating up the furnace walls is given. The method is based on an analysis of experimental results and is applicable also for excess or reduced pressure conditions within the furnace, provided gas leakage through the walls is prevented. The application of the method to the choice of an optimum wall design for a given furnace heating-up curve is illustrated.



PROCESSES AND PROPERTIES INDEX

5

Investigation of the Heating-Up Process of a Furnace Lining and a New Method of Calculating Linings. I. Rafalovich. (Stal, 1940, No. 5–6, pp. 36–43). (In Russian). Experiments were undertaken to study the heating up of an experimental furnace wall under conditions of normal, excess and reduced air pressure within the furnace. The results plotted graphically are compared with those derived by several analytical methods, some of which under certain conditions gave satisfactory results. A new method of calculating the heat losses when heating up the furnace walls is given. The method is based on an analysis of experimental results and is applicable also for excess or reduced pressure conditions within the furnace, provided gas leakage through the walls is prevented. The application of the method to the choice of an optimum wall design for a quick furnace heating-up curve is illustrated.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SOKOLOV, I.I.; RAFALOVICH, I.A.

Bison in Moldavia. Biul. MOIP. Otd. biol. 66 no.3:144-146 My-Je '61. (MIRA 14:6)

(KODRY--BISON, FOSSIL)

LIVSHITS,E.M., inzhener; PONIZOVSKIY,M.M., inzhener; KHARKIN,Yu.A., inzhener; LOGINOV,B.I., inzhener; RAFALOVICH,I.I., inzhener; STEPANOV,G.G., inzhener; KOZYAKIN,A.N., inzhener; RABINOV,B.S., inzhener

Air leaks in convective shafts of boiler installations. Elek.sta.26 no.10:38-47 O '55. (MLRA 8:12)

1. Glavnoye upravleniye elektrostantsiy i elektrosetey Urala i Vostoka Ministerstva elektrostantsiy (for Loginov) 2. Rostovenergo (for Rafalovich) 3. Rostovenergoremont (for Stepanov) 4. Leningradskaya elektroenergeticheskaya sistema (for Kozyakin and Rabinov)
(Boilers)

AID P - 3771

Card 1/1 Pub. 26 - 13/29

Authors : Loginov, B. I., Eng., Glavvostokenergo, I. I. Rafalovich, Eng., Rostovenergo, G. G. Stepanov, Eng., Rostovenergo-remont, A. N. Kozyakin, Eng. and B. S. Rabinov, Eng., Lenenergo

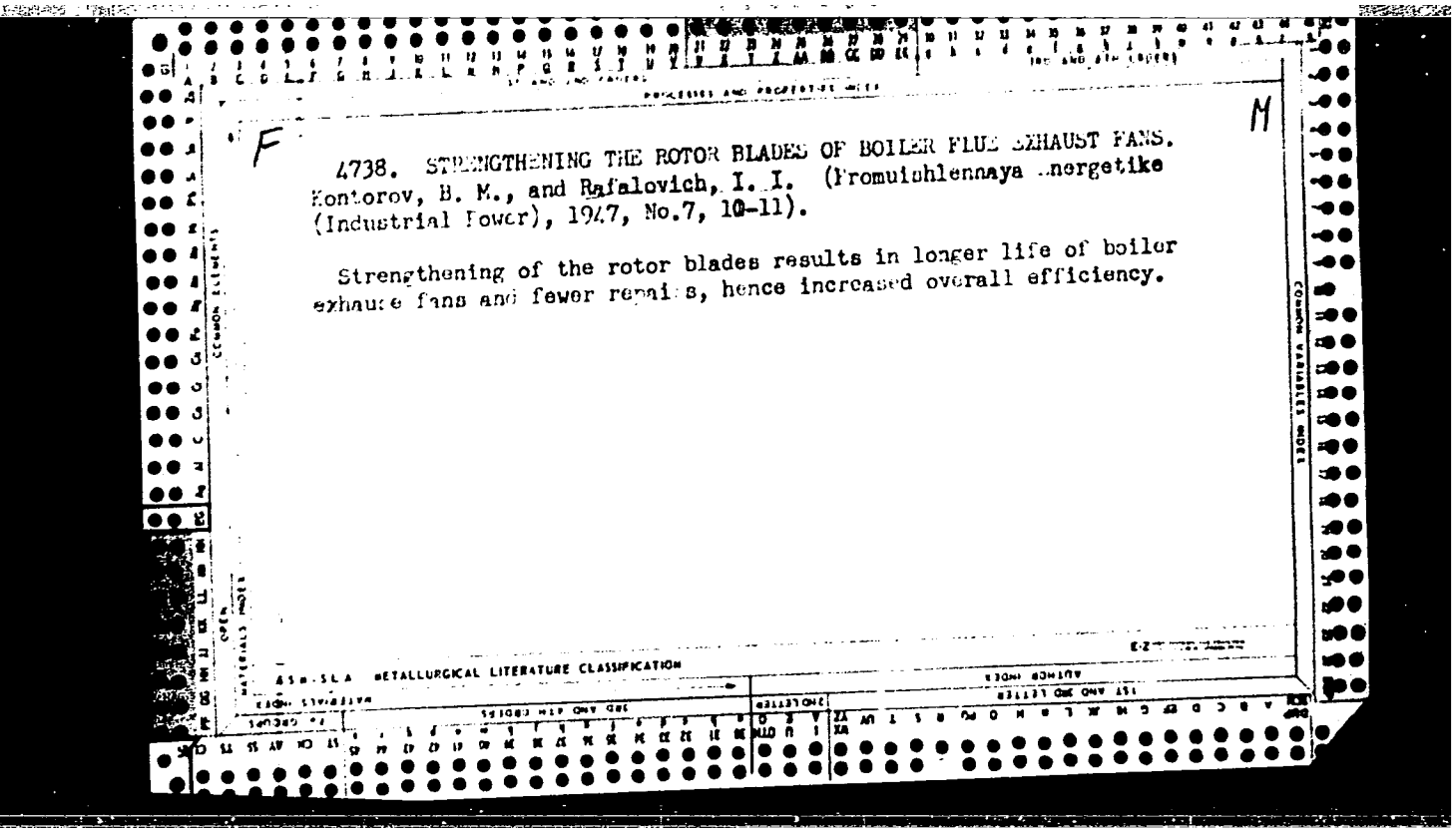
Title : Air indraft in convection shafts of boiler aggregates (Discussion)

Periodical : Elek. sta., 10, 44-47, O 1955

Abstract : The authors discuss the article of E. M. Livshits, M. M. Ponizovskiy, and Yu. A. Kharkin (this journal No. 10, O 1955) as concerns certain technical details of a tight construction of ducts in boiler aggregates. They suggest solutions based on their own operational experience. Four drawings.

Institutions: See Authors

Submitted : No date

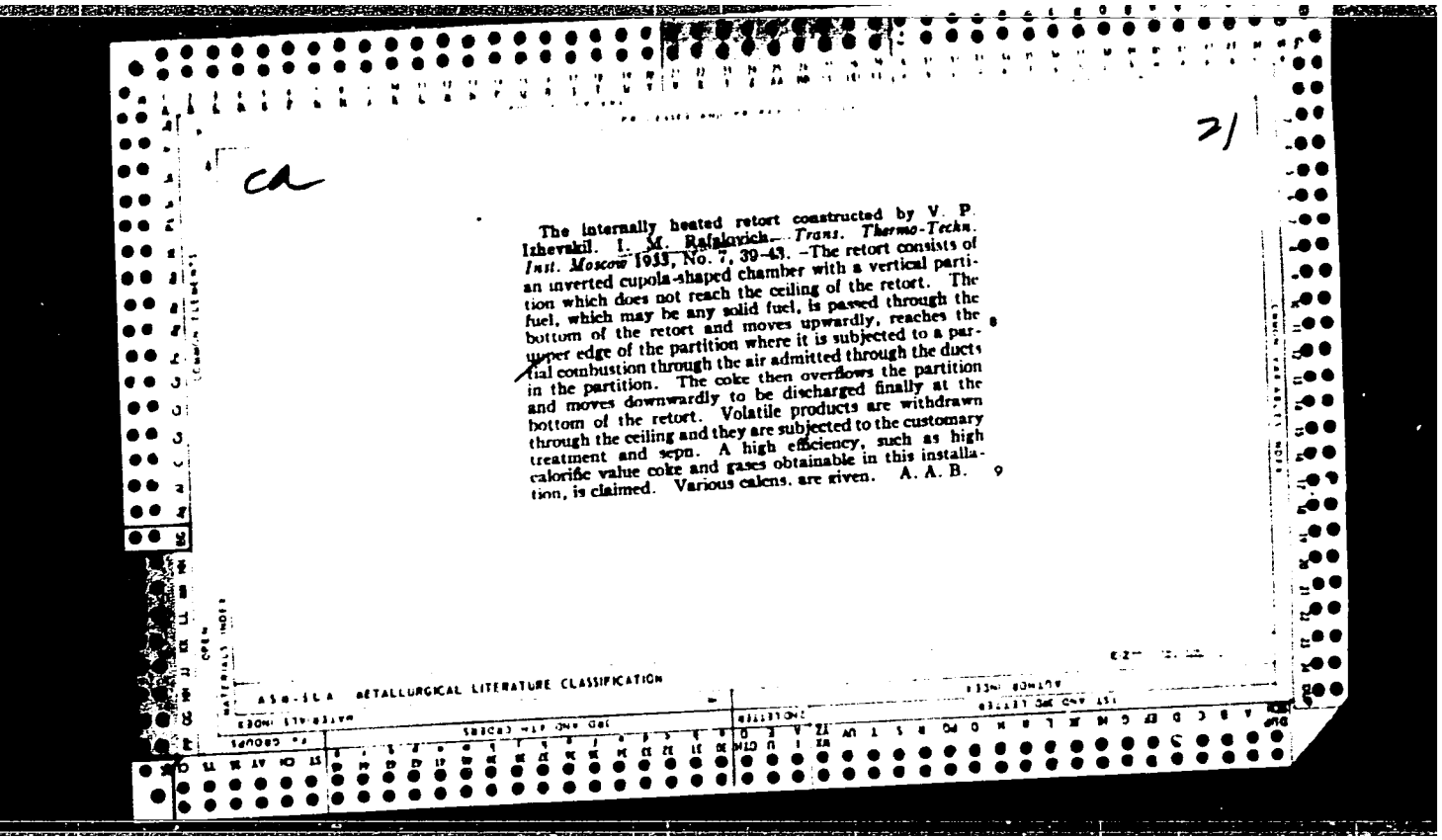


F

4738. STRENGTHENING THE ROTOR BLADES OF BOILER FLUE EXHAUST FANS. Kontorov, B. M., and Rafalovich, I. I. (Promyshlennaya Energetika (Industrial Power), 1947, No.7, 10-11).

Strengthening of the rotor blades results in longer life of boiler exhaust fans and fewer repairs, hence increased overall efficiency.

M



ca

21

The internally heated retort constructed by V. P. Izhevskil. I. M. Rafalovich. *Trans. Thermo-Techn. Inst. Moscow* 1933, No. 7, 39–43. –The retort consists of an inverted cupola-shaped chamber with a vertical partition which does not reach the ceiling of the retort. The fuel, which may be any solid fuel, is passed through the bottom of the retort and moves upwardly, reaches the upper edge of the partition where it is subjected to a partial combustion through the air admitted through the ducts in the partition. The coke then overflows the partition and moves downwardly to be discharged finally at the bottom of the retort. Volatile products are withdrawn through the ceiling and they are subjected to the customary treatment and sepn. A high efficiency, such as high calorific value coke and gases obtainable in this installation, is claimed. Various calcns. are given. A. A. B. 9

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

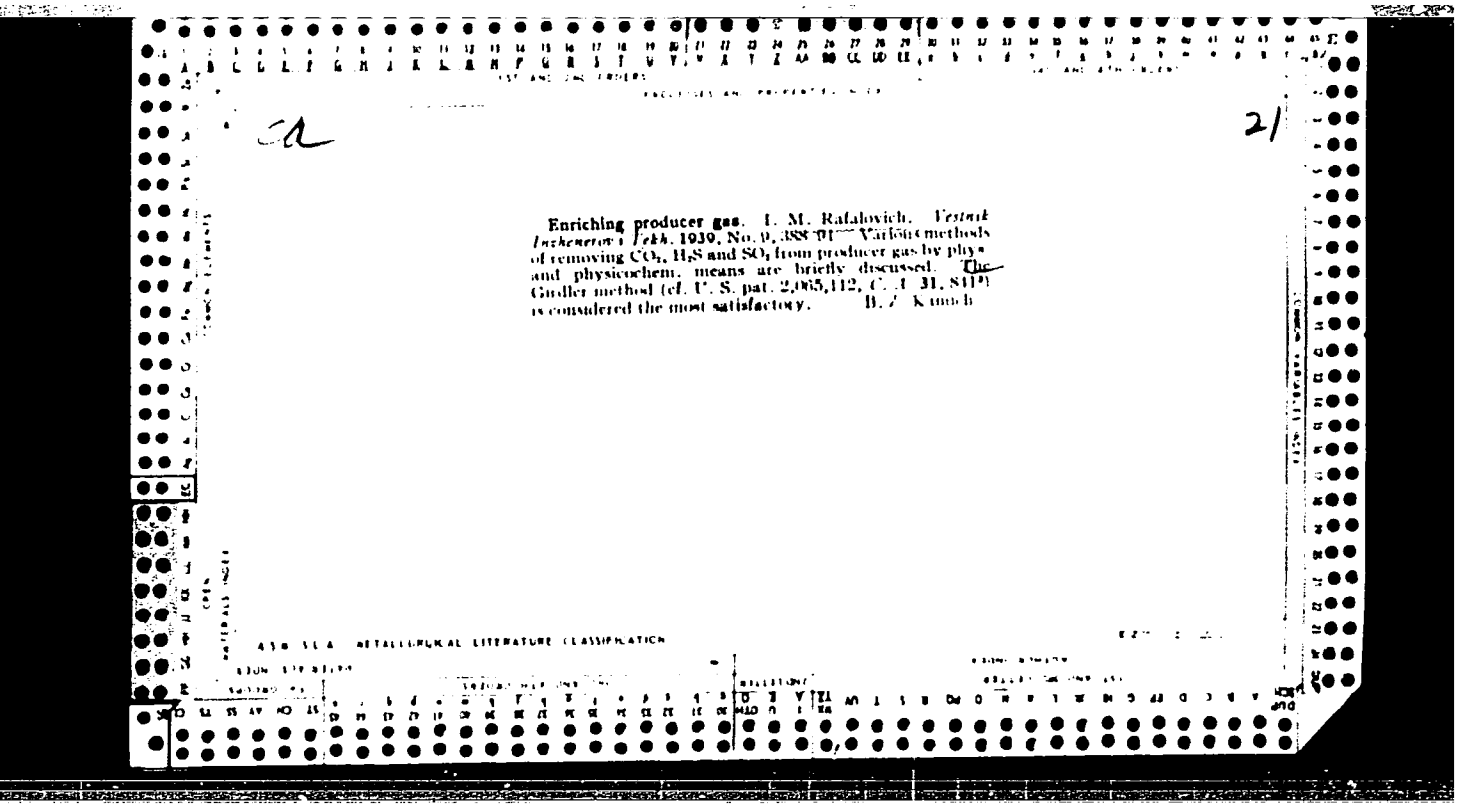
CA

PROCESSES AND PROPERTIES INDEX

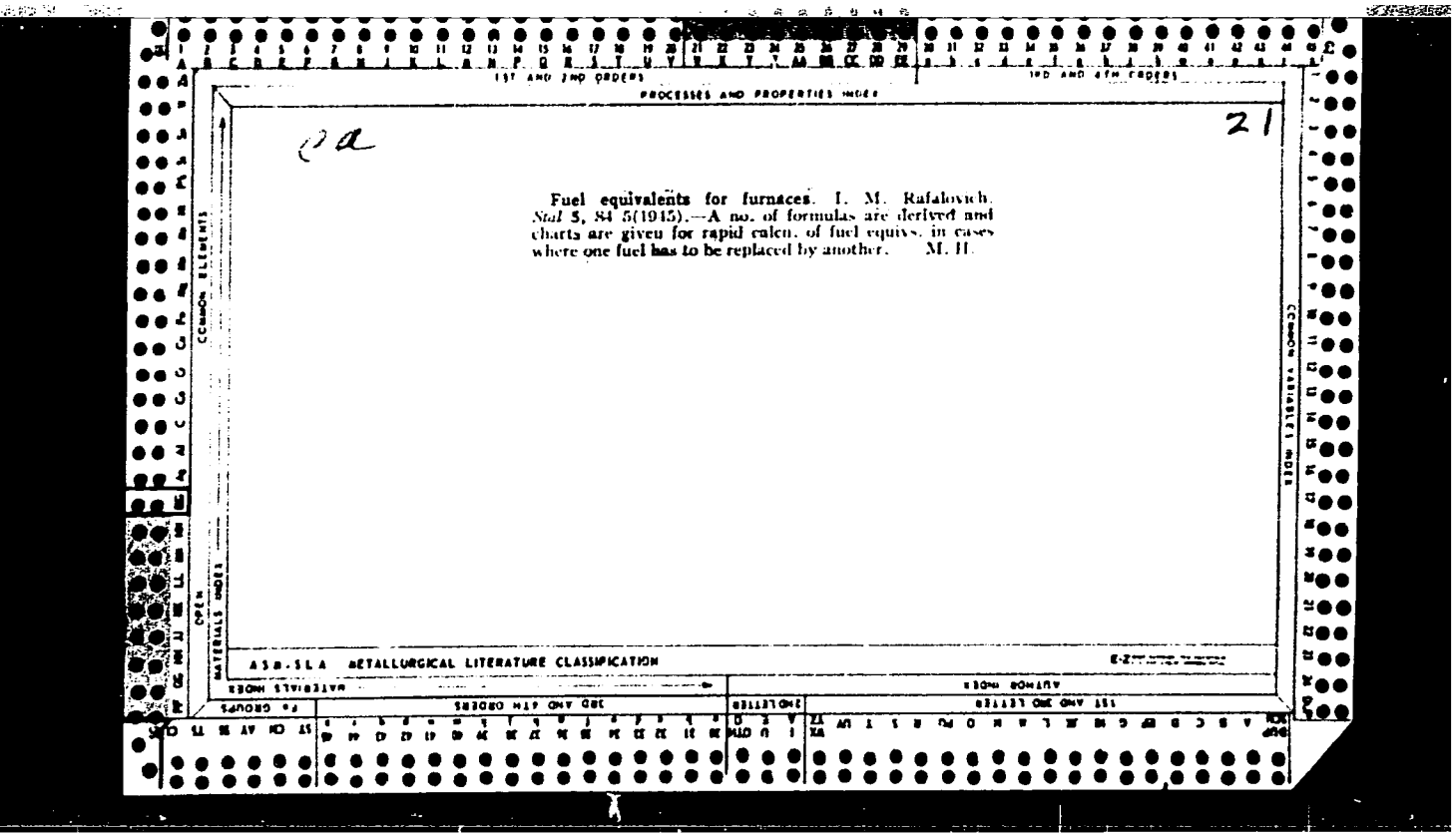
9

Utilization and detoxication of cupola-furnace gases. I. M. Ratalovich and V. I. Granovskii. *Liteinoe Delo* 10, No. 1, 14-18(1939); *Chem. Zentr.* 1940, II, [illegible]. The following arrangements were tested both theoretically and practically: (1) regeneration of the gases by the addn. of heat from without or by their own heat in the gasification of coke, (2) mixing of the gases with gaseous fuel of high heating value, (3) burning of the gas with the heat developed being used for recuperation or regeneration of steam, (4) combustion of the gases without utilizing the heat produced and (5) discharge of the gas into the atm. Of these schemes, only (3) is useful under operating conditions. The advantages and disadvantages of using the heat for recuperation are discussed. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Enriching producer gas. I. M. Rafalovich. *Vestnik Inzhenerov i Tekh.* 1939, No. 9, 888-91.—Various methods of removing CO_2, H_2S and SO_2 from producer gas by phys. and physicochem. means are briefly discussed. The Gadler method (cf. U. S. pat. 2,065,112, C. A. 31, 819) is considered the most satisfactory. B. Z. Kanoh

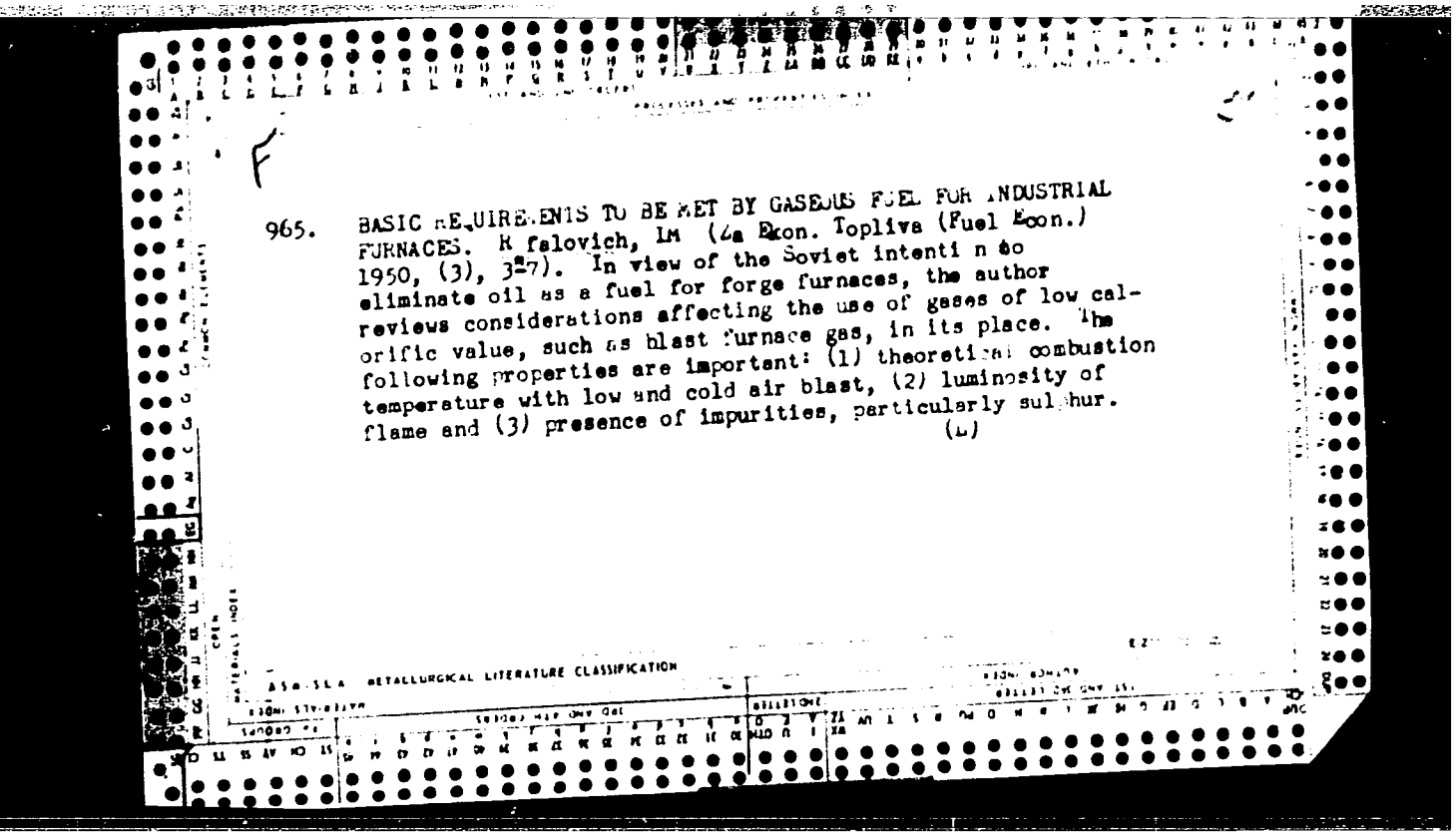


21

Fuel equivalents for furnaces. I. M. Rafalovich. *Stal* 5, 84–5(1945).—A no. of formulas are derived and charts are given for rapid calcn. of fuel equivs. in cases where one fuel has to be replaced by another. M. H.

2687. MEDIUM PRESSURE BURNERS FOR MODERN FURNACE OILS. Rafalovich, I. M., Bykhovskii, Yu. A. and Zaberezhnyi, I. I. (Za. Ekon. Topliva (Fuel Econ.), Dec. 1950, 9-12).

An illustrated description is given of modifications of burners used in copper smelting furnaces and burning 400 k.g. per hour of oil with an Engler viscosity of 5-6° at 90°C. (L).



F

965. BASIC REQUIREMENTS TO BE MET BY GASEOUS FUEL FOR INDUSTRIAL FURNACES. R falovich, IM (Za Ekon. Topliva (Fuel Econ.) 1950, (3), 3-7). In view of the Soviet intenti n to eliminate oil as a fuel for forge furnaces, the author reviews considerations affecting the use of gases of low calorific value, such as blast furnace gas, in its place. The following properties are important: (1) theoretical combustion temperature with low and cold air blast, (2) luminosity of flame and (3) presence of impurities, particularly sulphur. (L)

RAFALOVICH, I. M.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 519 - I

BOOK Call No.: TN677.R23

Authors: BUROVOY, I. A., BYKHOVSKIY, Yu. A., ZABEREZHNYY, I. I. and RAFALOVICH, I. M.

Full Title: EXPERIENCE WITH AUTOMATIC CONTROL OF TEMPERATURE IN REVERBERATORY COPPER-SMELTING FURNACES

Transliterated Title: Opyt avtomatizatsii teplovogo rezhima otrazhatel'nykh medeplavil'nykh pechey

PUBLISHING DATA

Originating Agency: None

Publishing House: State Scientific and Technical Publishing House of Literature on Ferrous and Nonferrous Metallurgy (Metallurgizdat)

Date: 1953 No. pp.: 328 No. of copies: 3,000

Editorial Staff

Scientific Editor: Rafalovich, I. M., Prof. Dr. of Tech. Sci.

Editor: Charikhov, L. A., Eng., Appraiser: Lisovskiy, D. I., Prof. Dr. of Tech.Sci.

PURPOSE: The book is intended for engineers and technicians dealing with controlling and measuring instruments and with automation, as well as for technologists in copper-smelting plants, scientific workers in design and research institutes, and students of metallurgical and technical schools.

TEXT DATA

Coverage: This book describes the methods of furnace investigation and preparation for automatic temperature control under various industrial conditions. It gives data on special features of the installation of automatic devices in copper-smelting shops, on the results of the analysis of individual elements of control, and on the adjusting of automatic furnaces to the most favorable temperature. It contains

Opyt avtomatizatsii teplovogo rezhima otrazhatel'nykh medeplavel'nykh pechey

AID 519 - I

information on the efficiency of the automation of reverberatory and refining copper-smelting furnaces. According to the authors, experiments in the automation of copper-smelting furnaces started in the USSR in 1949, and were completed in early 1952. Three reverberatory and two refining furnaces of the four leading Soviet Copper smelteries (see "Facilities") were the first to be controlled automatically. The book is provided with schematic drawings of furnaces and various devices, and tables and diagrams. The appendix contains instructions on automatic control of furnaces for smelters and foremen.
No. of References: 18 Russian, 1939-1952
Facilities: Engineers, technicians and workers of Kirovgrad, Krasnoural'sk, Balkhash and Pyshma Copper Smelteries; staff of the Moscow and Sverdlovsk Branches of the Instrument Design, Installation and Adjustment Organization (Proyektmontazhpribor); I. A. Strigin, Director of the State Scientific Research Institute of Nonferrous Metals (Gintsvetmet), D. M. Yukhtanov, assstant chief, and Gintsvetmet scientific workers.

RAFALOVICH, I. M.

Rafalovich, I. M., Burovoy, I. L., Bykhovskiy, Yu. A., and Zaberezhnyy I. I., "Development and Installation of Automatic Regulation of Heat Conditions in Reverberatory and Refining Furnaces," in the book Obogashcheniye i metallurgiya tsvetnykh metallov [Enrichment and Metallurgy of Non-ferrous Metals], (Collection of Scientific Works No 8), Moscow, 1953, Metallurgizdat, Pages 64-87, 15 figures, 2 tables (Gintsvetmet).

RAFALOVICH, I.M., professor, doktor.

Remarks on D.A.Diomidovskii's article "Study of the thermal performance of a refractory furnace using a flame micromodel." TSvet.met. 26 no.4:64-65 Jl-Ag '53. (MIRA 10:10)
(Metallurgical furnaces) (Diomidovskii, D.A.)

RAFALOVICH, I.M., prof., doktor

Determining the thermal properties of metallurgical materials with the aid of quantitative thermal analysis. TSvet.met. 28 no.3:30-38 My-Je '55. (MIRA 10:11)

1. Gintsvetmet.

(Metallurgy) (Thermal analysis)

GARENSKIKH, A.D.; BULATOV, V.D.; FEDCHENKO, Yu.P.; RAFALOVICH, I.M.; ZABEREZHNYY, I.I.

Industrial air heater units for reverberatory copper smelting furnaces. TSvet.met. 29 no.4:38-43 Ap '56. (MLRA 9:8)

1. Kirovgradskiy medeplavil'nyy zavod (for Garenskikh, Bulatov, Fedchenko); 2. Gintsvetmet (for Rafalovich, Zaberezhnyy).
(Copper--Metallurgy) (Smelting furnaces)

RAVALOVICH, Iosif Markovich, professor, doktor; RODE, Ye.Ya., doktor tekhnicheskikh nauk, retsenzent; MIKHAYLENKO, A.Ya., kandidat tekhnicheskikh nauk, retsenzent; GUL'DIN, I.T., redaktor; EL'KIND, L.M., redaktor izdatel'stva; ISLENT'YEVA, P.G., tekhnicheskiy redaktor

[Determining thermal and physical properties of nonferrous metals] Opredelenie teplofizicheskikh svoistv materialov tsvetnoi metallurgii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 110 p. (MLRA 10:10)
(Nonferrous metals)

137-58-5-8816

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5 p 11 (USSR)

AUTHOR: Rafalovich, I. M.

TITLE: Determination of the Thermophysical Properties of Materials Required for Thermal Balance and Heat-transfer Calculations (Opredeleniye teplofizicheskikh svoystv materialov, neobkhodimykh dlya sostavleniya teplovogo balansa i raschetov teploperedachi)

PERIODICAL: Sb. nauch. tr. Gos. n.-i. in-t tsvetn. met. 1957, Nr 13, pp 289-304

ABSTRACT: Description of a laboratory method for the determination of thermophysical values of various materials. The laboratory setup consists of a 2.5-kw Silit furnace which houses a lightweight, fire-resistant, protective container equipped with a lid. A corundum crucible containing the material being investigated is placed into the container. The investigation method consists of the following: a constant amount of heat per unit time is imparted to the substance contained in the crucible; the temperature is measured in the center of the crucible, and inside and and outside of the protective container near its wall. The first

Card 1/3

Determination of the Thermophysical Properties (cont.)

temperature reading characterizes the process occurring within the crucible: the greater the consumption of heat the less rapidly does the temperature increase. The difference between the other two readings characterizes the flow of heat which, after passing through the walls of the protective container, heats and melts the material and heats the crucible. The system is first calibrated with the aid of two substances the heat content (HC) at various temperatures of which is well known. The time required to reach temperatures of 100°, 200°, . . 1200°C on the temperature axis is recorded during calibration as well as during the experiment itself. The average temperature drop is also computed. A calculation formula is given which permits to determine the HC and heat capacity at any temperature by utilizing the data mentioned above. After conducting one experiment for a period of 5-7 hrs, a graph showing variations of HC and of heat capacity may be constructed for the temperature interval between 0° and 1200°. As the heat consumption of the material being investigated increases in comparison with the heat consumption of the crucible and of the protective container, the accuracy of the measurements increases also; enlarging the scale of the system also improves the accuracy. In order to determine the heat conductivity and temperature diffusivity of a substance under investigation, a cylinder, the height of which is three times greater than the diameter, is made of that substance and is heated. Thermo-

137-58-5-8816

Determination of the Thermophysical Properties (cont.)

couples are installed along the axis of the cylinder and in a groove on its surface. If the material is friable, it is placed into a cylindrical metal container equipped with a cover. The procedure described is conducted at a constant rate of heating. The temperature diffusivity is determined from experimental results and by means of a diagram derived therefrom. The novel technique and accompanying apparatus are within reach of any plant laboratory making it possible to determine the HC, the heat capacity, the heat conductivity, and the temperature diffusivity of various materials in a single setup.

T G.

1. Materials--Thermal properties 2. Materials--Physical properties
3. Heat transfer--Mathematical analysis 4. Furnaces--Control systems
5. Furnaces--Equipment

Card 3/3

PHASE I BOOK EXPLOITATION SOV/4601

Koordinatsionnoye soveshchaniye po primeneniyu kisloroda na metallurgicheskikh zavodakh Urala. Sverdlovsk, 1956

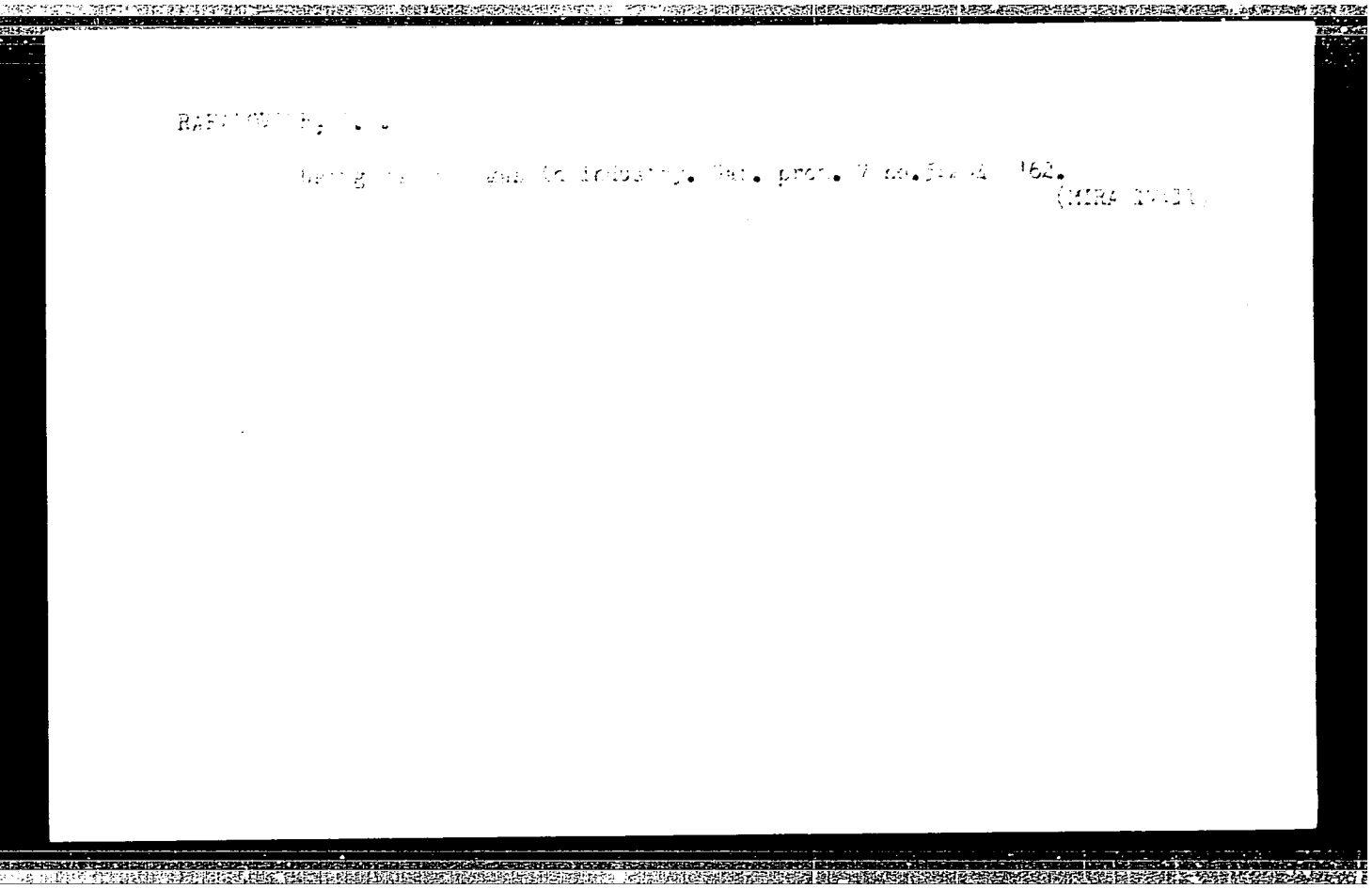
Primeneniye kisloroda na metallurgicheskikh predpriyatiyakh Urala; materialy koordinatsionnogo soveshchaniya (Use of Oxygen in Metallurgical Plants of the Urals; Materials of the Coordination Conference) Sverdlovsk, 1960. 152 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Ural'skiy filial. Institut metallurgii; Ural'skiye pravleniya nauchno-tekhnicheskikh obshchestv chernoy i tsvetnoy metallurgii.

Resp. Ed.: P.S. Kusakin, Candidate of Technical Sciences; Tech. Ed.: N.F. Seredkina.

PURPOSE: This collection of papers is intended for scientific research and technical personnel in the field of metallurgy.

COVERAGE: The use of oxygen in ferrous and nonferrous metallurgy of the Urals is discussed. Results of experimental use of oxygen in some metallurgical plants are presented. During the Conference, held December 20 and 21, 1956, the following persons (in addition to the authors) took part in the discussion: V.Ya. Miller, V.V. Mikhaylov, P.Ya. Sorokin, A.A. Perestoronin (all affiliated with the Institute of Metallurgy of the Ural Branch AS USSR), S.M. Kazachenko (Nizhne-Saldinskiy metallurgicheskiy zavod - Nizhnyaya-Salda Metallurgical Plant), M.F. Kochin (Deceased) (Ural'skiy institut chernykh metallov - Ural Institute of Ferrous Metals), M.Ye. Kislitsin (Chelyabinskiy metallurgicheskiy zavod - Chelyabinsk Metallurgical Plant), G.V. Demin (Krasnoural'skiy medeplavil'nyy zavod - Krasnoural'sk Copper Smelting Plant), V.A. Aglitskiy (Institut Unipromed' - "Unipromed'" Institute). Some of the papers are followed by references, both Soviet and non-Soviet.



RAFALOVICH, I.M., RUSSO, V.L.

Cyclone-type smelting furnaces. TSvet. met. 37 no.9:28-36 S '64.
(MIRA 18:7)

RAFALOVICH, I.M., prof., doktor tekhn. nauk; ZLOTINA, N.L., red.

[Gas heating of metallurgical furnaces; bibliography for 1948-1962] Gazovoe otoplenie metallurgicheskikh pechei; bibliograficheskii spravochnik za 1948-1962 gg. Moskva, 1963. 77 p. (MIRA 17:5)

1. Moscow. TSentral'nyy institut informatsii tsvetnoy metallurgii.

RAFALOVICH, I.M.

Necessity of external electric preheating of furnaces for the investigation of exothermic processes. TSvet. met. 36 no.11:32-34 N '63. (MIRA 17:1)

RAFALOVICH, I.M.

Regular pattern in the formation of a slag crust in metallurgical furnaces. TSvet. met. 36 no.4:44-50 Ap '63. (MIRA 16:4)

(Metallurgical furnaces—Maintenance and repair)
(Heat—Transmission)

YEVDOKIMENKO, A.I.; ZABEREZHNYY, I.I.; RAFALOVICH, I.M.; REZNIK, I.D.;
Prinimali uchastiye: SHERMAN, B.P.; KUDRIN, A.N.; GALITSKIY, L.M.;
SERPOV, V.I.; VOROB'YEV, V.A.; STEPANOV, A.S.; RODIONOVA, N.M.;
BUNTOVNIKOV, A.S.; YEVDOKIMOVA, L.Ye.

Air blast preheating for shaft furnaces. Tsvet. met. 33 no.10:12-20 O '60. (MIRA 13:10)

1. Gosudarstvennyy institut po tsvetnym metallam (for Yevdokimenko, Zaberezhnyy, Rafalovich, Reznik, Rodionova, Buntovnikov, Yevdokimova). 2. Yuzhno-Ural'skiy nikelevyy zavod (for Sherman, Kudrin, Galitskiy, Serpov, Vorob'yev, Stepanov).
(Air preheaters)
(Metallurgical furnaces--Equipment and supplies)

RAFALOVICH, Iosif Markovich, prof., doktor tekhn. nauk; BARK, S.Ye., red.; UMANSKIY, V.I., red. izd-va; KARASEV, A.I., tekhn. red.

[Natural gas as fuel for metallurgical furnaces] Prirodnyi gaz kak toplivo metallurgicheskikh pechei. 2. izd. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 324 p. (MIRA 14:12)

(Metallurgical furnaces) (Gas, Natural)

PEREL'SHTEYN, N.L., obshchiy red.; DRUZHININ, B.N., inzhener; nauchnyy red.; CHERNASHKIN, V.G., kand. tekhn. nauk, nauchnyy red.; GRABINSKIY, Ye.K., [deceased], inzhener, red.; IMMERMAN, A.G., kand. tekhn. nauk, red.; RAFALOVICH, L.A., inzh., red.; GORCHAKOV, A.V., otvetstvenyy red.; ZLATOTSVETOVA, I.I., red.; VASILEVSKIY, B.A., tekhn. red.

[Using prestressed reinforced concrete; based on data from the Second International Congress, Amsterdam, September 1955] Primenenie napriazhenno armirovannogo zhelezobetona; po materialam Vtorogo mezhdunarodnogo kongressa (g. Amsterdam, sentiabr' 1955 g.). Moskva, 1957. 322 p. (MIRA 10:12)

1. Russia (1923- U.S.S.R.) Ministerstvo stroitel'stva. Tekhnicheskoye upravleniye. 2. TSentral'noye byuro tekhnicheskoy informatsii (for Zlatotsvetova). 3. Chlen-korrespondent Akademii stroitel'stva i arkhitektury (for Perel'shteyn).
(Amsterdam--Prestressed concrete--Congresses)

CHILOVSKIY, V.G., red.; KOZKO, D.I., red.; KOPTEV, N.N., red.; KUZNETSOV, P.M., red.; MIKHAYLOV, M.V., red.; NESIS, Ye.I., red.; RAZL, Yu.V., red.; RAFALOVICH, L.A., red.; STRAKHOV, S.M., red.; STEBLYANKO, I.V., tekhn. red.

[In this book are given the answers to the questions: 1. Are there intelligent beings on other planets? 2. What significance has the Kuban-Kalaus Irrigation and Water-Supply System for Stavropol? 3. What is travertine? How is it formed and for what purposes is it used?] V etoi knige dany otvety na voprosy: 1. Est' li razumnye sushchestva na drugikh planetakh? 2. Kakoe znachenie imeet dlia Stavropolia Kuban'-Kalausskaia obvodnitel'no-orositel'naia sistema? 3. Chto takoe travertin, kak on obrazuetsia i v chem ego poleznost'? Stavropol', Stavropol'skoe knizhnoe izd-vo, 1960. 32 p. (MIRA 16:11)
(Plurality of worlds) (Kuban--Water supply)
(Travertine)

USSR/Human and Animal Physiology (Normal and Pathological). T-4
Blood Pressure. Hypertension.

Abs Jour : Ref Zhur - Biol., No 16, 1958, 74816

Author : Rafalovich, M.B.
Inst : -
Title : Clinical Observations on the Influence of Ovarian and Uterine Removal in Women on the Appearance in Them of High Blood Pressure.

Orig Pub : Probl. endokrinol. i gormonoterapii, 1957, 3, No 1, 85-87

Abstract : No abstract.

Card 1/1

RAFALOVICH, M.S.

Combination of hypertension and cancer. Sov.med. 22 no.11:41-43 N '58 (MIRA 11:11)

1. Iz kafedry propedevtiki vnutrennikh bolezney Stavropol'skogo meditsinskogo instituta (dir. - prof. V.G. Budylin).
(NEOPLASMS, compl.
hypertension (Rus))
(HYPERTENSION, compl.
cancer (Rus))

RAFALOVICH, M. B., dotsent (Stavropol')

Amount of cholesterol and lecithin and their correlation in patients with primary arterial hypotension. Klin. med. no.6:116-119 '61. (MIRA 14:12)

1. Iz kafedry propedevtiki vnutrennikh bolezney Stavropol'skogo me meditsinskogo instituta (dir. - prof. V. G. Budylin)

(HYPOTENSION) (CHOLESTEROL) (LECITHIN)

RAFALOVICH, M.B., dotsent

Changes in arterial pressure in various forms of diabetes mellitus.
Sov. med. 25 no.11:99-102 N '61. (MIRA 15:5)

1. Iz kafedry propedevtiki vnutrennikh bolezney Stavropol'skogo meditsinskogo institua (dir. - prof. V.G.Budylin).
(DIABETES) (BLOOD PRESSURE)

RAFALOVICH, M.B.; GOLOVCHENKO, G.T.

Peptic ulcer of the stomach and the duodenum in many members of the same family. Uch. zap. Stavr. gos. med. inst. 12:420 '63. (MIRA 17:9)

1. Kafedra vnutrennikh bolezney stomatologicheskogo fakul'teta (zav. dotsent M.B. Rafalovich) Stavropol'skogo gosudarstvennogo meditsinskogo instituta.

RAFALOVICH, M.B.; KUTILOVA, V.N.

Lipid content in the blood of persons of different age groups. Uch. zap. Stavr. gos. med. inst. 12:421-422 '63. (MIRA 17:9)

1. Kabinet geriatrii (nauchnyy rukovoditel' dotsent M.B. Rafalovich) Stavropol'skogo gosudarstvennogo meditsinskogo instituta.

RAFALOVICH, M. B., dotsent

Average arterial pressure in primary arterial hypotonia. Vrach. delo no.7:135-136 Jl '62. (MIRA 15:7)

1. Kafedra propedevtiki vnutrennikh bolezney Stavropol'skogo meditsinskogo instituta.

(BLOOD PRESSURE) (HYPOTENSION)

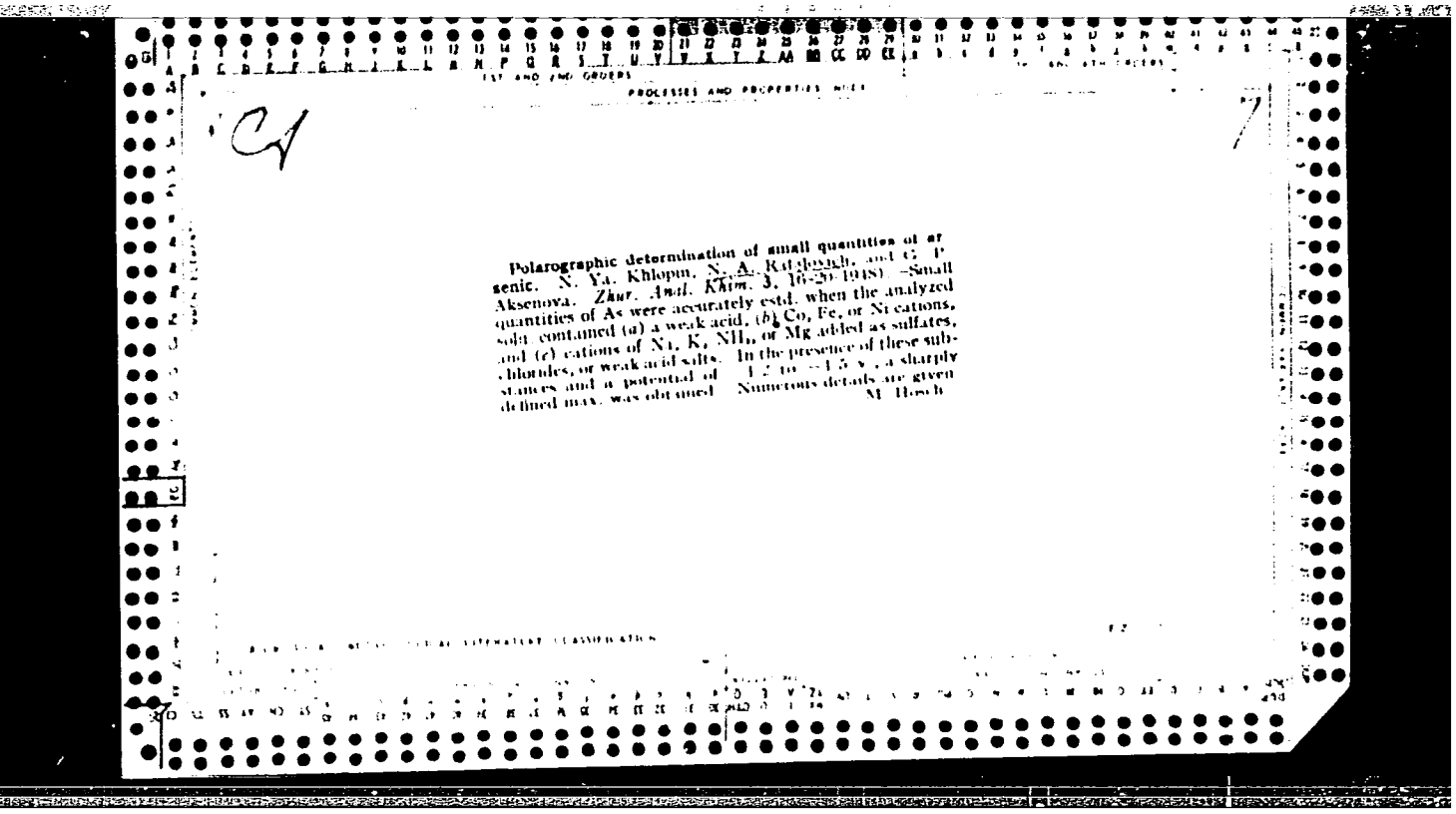
RAFALOVICH, M.B., dotsent; KHARCHENKO, L.I., red.; STEBLYANKO, T.V., tekhn. red.

[Therapeutic nutrition] Lechebnoe pitanie. 2., dop. izd. Stavropol', Stavropol'skoe knizhnoe izd-vo, 1962. 95 p. (MIRA 15:6)

(DIET IN DISEASE)

BOLDIN, K.M. (Yaroslavl'); DROZDOVA, Z.S.; LEVIN, R.I.; VAYSMAN, L.A. (Kuybyshev-obl.); PODOSINOVSKIY, V.V.(Kazan'); SAYFULLINA, Kh.M. (Kazan'); BUSYGIN, N.V.(Kazan'); RAZUMOVSKIY, Yu.K.(Leninogrosk); GEL'FER, G.A., dotsent (Gor'kiy); MAMISH, M.G.(Kazan'); RAFALOVICH, M.B., dotsent; MEL'NICHUK, S.P., kand.med.nauk; KRAPIVIN, B.V.; STAROVEROV, A.T. (Saratov); SURIN, V.M.; POROSENKOV, V.S.(Romodanovo, Mordovskoy ASSR); ANDROSOV, M.D.(Moskva); ZARIPOV, Z.A.(Urussu, Tatarskoy ASSR); MURAV'YEV, M.F.(Izhevsk); KUZ'MIN, V.I.(Batyrevo, Chuvashskoy ASSR); SITDYKOV, E.N.(Kazan'); YUDIN, Ya.B.(Novokuznetsk)

Short reports. Kaz.med.zhur. no.4:81-91 Jl-Ag '62. (MIRA 15:8)
(MEDICINE--ABSTRACTS)



Polarographic determination of small quantities of arsenic. N. Ya. Khlopin, N. A. Ratchovsh, and G. P. Aksenova. *Zhur. Anal. Khim.* 3, 16-20 (1948).—Small quantities of As were accurately estd. when the analyzed soln. contained (*a*) a weak acid, (*b*) Co, Fe, or Ni cations, and (*c*) cations of Na, K, NH_4, or Mg added as sulfates, chlorides, or weak acid salts. In the presence of these substances and a potential of −1.2 to −1.5 v., a sharply defined max. was obtained. Numerous details are given.
M. Hirsch

RAFALOVICH, N. A.

Khlopin, N. Ia., Rafalovich, N. A., Aksenova, G. P., "Maximums on volt-ampere graph curves for arsenic." (p. 1008)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1948, Volume 18, No. 6

RAFALOVICH, N. A.

"Maximums on the Volt-Ampere Graph Curves for Arsenic," Zhur. Obshch. Khim., 18, No. 6, 1948. Mbr., Molotov Oblast Sanitation-Hygiene Lab., -c1948-. Molotov State Pharmaceutical Inst., -c1948-.

[illegible], [illegible]

[illegible], [illegible], [illegible] and Ak[illegible]nov., G. [illegible], [illegible] [illegible]mum on the volt-a[illegible] [illegible] [illegible] [illegible] the cathode [illegible] the formation of the [illegible] [illegible] [illegible] [illegible] [illegible] on [illegible] [illegible]ographic curves. [illegible]

It has been established that the apparent [illegible] of the [illegible] in the cases [illegible] is present only at a potential more negative than -1. [illegible]. The [illegible] of the [illegible] on the volt-a[illegible] curve of arsenic [illegible] accompanied by the liberation of [illegible] hydrogen. Moreover, a difference in intensity and constancy of the [illegible] of the electrolyte and the surface of the mercury cathode is dependent upon the [illegible] of the falling of the drop.

[illegible] State [illegible] In[illegible]t. and the Regional Sanitary-Health [illegible].
[illegible], [illegible]

SO: Journal of [illegible] Chemistry (USSR) [illegible] ([illegible]) No. [illegible] ([illegible])

7

Polarographic determination of the phosphate ion. N. Ya. Khlopin, N. A. Rafalovich, and K. P. Privalova. *Zavodskaya Lab.* 15, 1305-7 (1940). Since the PO_4 ion is not reduced at the dropping-Hg electrode, indirect methods are necessary. The PO_4 ion is detd. by polarography of excess MoO_4^{--} after pptn. of NH_4 phosphomolybdate or by polarography of excess Bi after pptn. by $Bi(NO_3)_3$ in the presence of HNO_3. The former method gives more reliable results. G. M. Kosolapoff

RAFALOVICH, N. A.

25851 RAFALOVICH, N. A., KHLOPI , N. YA., I PRIVALOVA, K? P.

Polyarograficheskiy metod opredelniya fosfat-iona. Zavodskaya laboratoriya, 1949, No. 77, s. 1305-07

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

S/123/59/000/006/005/025
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 6, p. 59, # 20500

AUTHORS: Mashlin, A. Ya., Rafalovich, P. M.

TITLE: The Development in Production of Centrifugal Compressor Engines and Turbines in the Nevskiy mashinostroitel'nyy zavod imeni V. I. Lenina (Nevskiy Machine Works imeni V. I. Lenin)

PERIODICAL: Tr. Nevsk. mashinostroit. z-da, 1958, No. 3, pp. 5-23

TEXT: The production of compressors is concentrated in the work in an individual shop subdivided into several specialized sections of: housing, rotors, reductors, assembly, and control-testing. The shop is equipped with 7 vertical lathes, balancing machines, boring machines, and others, which are equipped with various accessories and special tools. The turbine production was developed simultaneously. As a result of the unification performed, the total series of steam turbines of 4,000 - 6,000-kw power (condensation, thermofication, driving turbines, and turbines with industrial bleeding-off steam) have up to 70% of the common units. A separate turbine shop was organized with sections of machining

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S/123/59/000/006/005/025
A005/A001

The Development in Production of Centrifugal Compressor Engines and Turbines in the Nevskiy mashinostroitel'nyy zavod imeni V. I. Lenina (Nevskiy Machine Works imeni V. I. Lenin)

and assembling the control units and steam distribution units, condenser production, and others; these sections are equipped with profiling lathes for discs, balancing machines for rotors, equipment for heat testing the shafts, stands for checking and testing turbines, and others. The introduction of advanced technology reduced the labor-consumption by 50 - 60%. The same shop produces gas turbines with blades of fire-proof steels. The specialized shops and sections are organized according to the technologic principle. The following new processes were introduced: finishing pass with broad cutting tools for processing the planes of horizontal joints, boring according to radial and axial braces, application of mechanized boring bars for boring closed structures. Guides, special patterns, and copying units at the machines for producing blade diffusers and diaphragms of compressor engines, special accessories for welding the diaphragms of high-pressure turbines, and the molding of diaphragms by models with metallic ribs are widely applied. The wheels and rotors are mounted on a stand in the vertical position; when wheels are fitted on, the end of the shaft is cooled down in liquid nitrogen. There are 22 figures. B. I. M.
Translator's note: This is the full translation of the original Russian abstract.
Card 2/2

RAFALOVICH, P. M. and B.V.SHOSTAKOVICH

Tekhnologiia proizvodstva turbomashin. Moskva, Mashgiz, 1950. 162 p. illus.

Bibliography: p. (161)

Technology of turbine production.

DLC: TJ870.S48

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953

RAFALOVICH, S., inzhener-podpolkovnik; SMOTKIN, Z., inzhener-mayor; GOVOROV, G., inzh.

Without complaints. Av. i kosm. 47 no.7:81-84 Jl '65. (MIRA 18:6)

TSIMERINOV, A. A; RAFALOVICH, S. M.

Vrachebnoe delo, Kiev, no.2:52 Mar-Apr 1952 (CLML 22:2)

1. Khar'kov Skin-Venereological Institute.

USSR / Microbiology - Microorganisms Photogenic to Humans and Animals. F-4

Abs Jour: Ref Zhur-Biol., No 9, 1958, 38537

Author : Pimerinov, A. A., Beznos, T. I., Rafalovich, S. M.
Inst : Not given.
Title : Further Study of Controlled Variability in Dermatophytes.

Orig Pub: V sb.: Sovrem. vopr. dermatol. Kiev, Gosmedizdat USSR, 1957, 148-153.

Abstract: A report on controlled variability of Microsporum ferrugineum and Trichophyton violaceum when cultivated on culture filtrates of M. lanosum, and on media containing its decomposition products.

Card 1/1 22

F

USSR/Microbiology - General Microbiology. Variability and Heredity.

Abs Jour : Ref Zhur Biol., No 22, 1958, 99312

products of M. lanosum, a variant was obtained which was able to form multicellular spindles, similar to the spindles of M. lanosum, along with another variant with mycelium of bamboo-shaped structure, as in M. lanosum. However, these characteristics were lost in subsequent reseedings. 3 microphotographs. -- Ya.I. Rautenshteyn

Card 2/2

BEZNOS, T.I.; RAFALOVICH, S.M.; BOGUSLAVSKAYA, A.V.; DOLGIKH, A.I.; KALMYKOVA, M.V. (Khar'kov)

Role of fungi in complications from treatment with antibiotics. Vrach. delo no.8:76-78 Ag '60. (MIRA 13:9)

1. Ukrainskiy nauchno-issledovatel'skiy kozhno-venerologicheskiy institut, Detskaya bol'nitsa Yuzhnoy zheleznoy dorogi i Chetvertyy kozhno-venerologicheskiy dispanser.
(FUNGI, PATHOGENIC) (ANTIBIOTICS)

RAFALOVICH, S. M.

Nov 53

USSR/ Medicine - Modification of Microorganisms

"The Problem of the Directed Modificationof Dermatophytes," A. A. Tsimerinov, T. I. Beznos, S. M. Rafalovich, Ukrainian Sci*Res Dermato-Venerological Inst

Zhur Mikro, Epid. i Immun, No 11, pp 27-30

Breeding of Microsporum Ferrugineum (I) together with Microsporum lanosum (II) results in a stable variant of I which has some of the cultural and morphilogival characteristics of II.

271T37

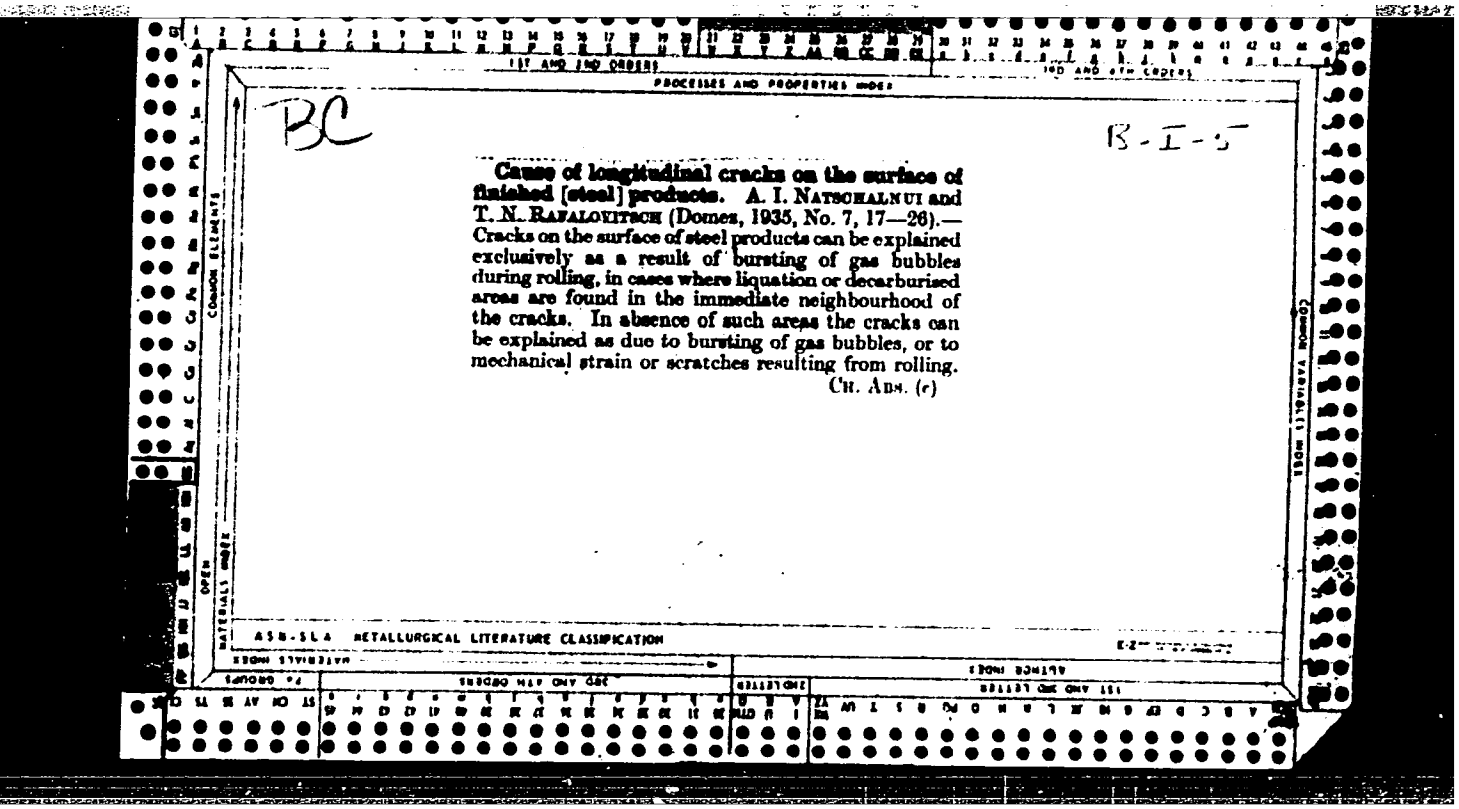
RAVLOVICH, S. N.

"Atrophy of the Optic Nerve due to Poisoning by Castor Plants," Vest. Oftalmol., 28, No. 3, 1949. Cand. Medical Sci. Mbr., Eye Dept., Road Polyclinic, Stalin Railroad, Dnepropetrovsk, -c1949-.

RAFALOVICH, Ts.N.

Interrelation of elements of the fine crystal structure and the plasticity of steel at high temperatures. Izv.vys.ucheb. zav.; chern.met. no.5:81-84 '60. (MIRA 13:6)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Steel--Metallography) (Metals at high temperature)



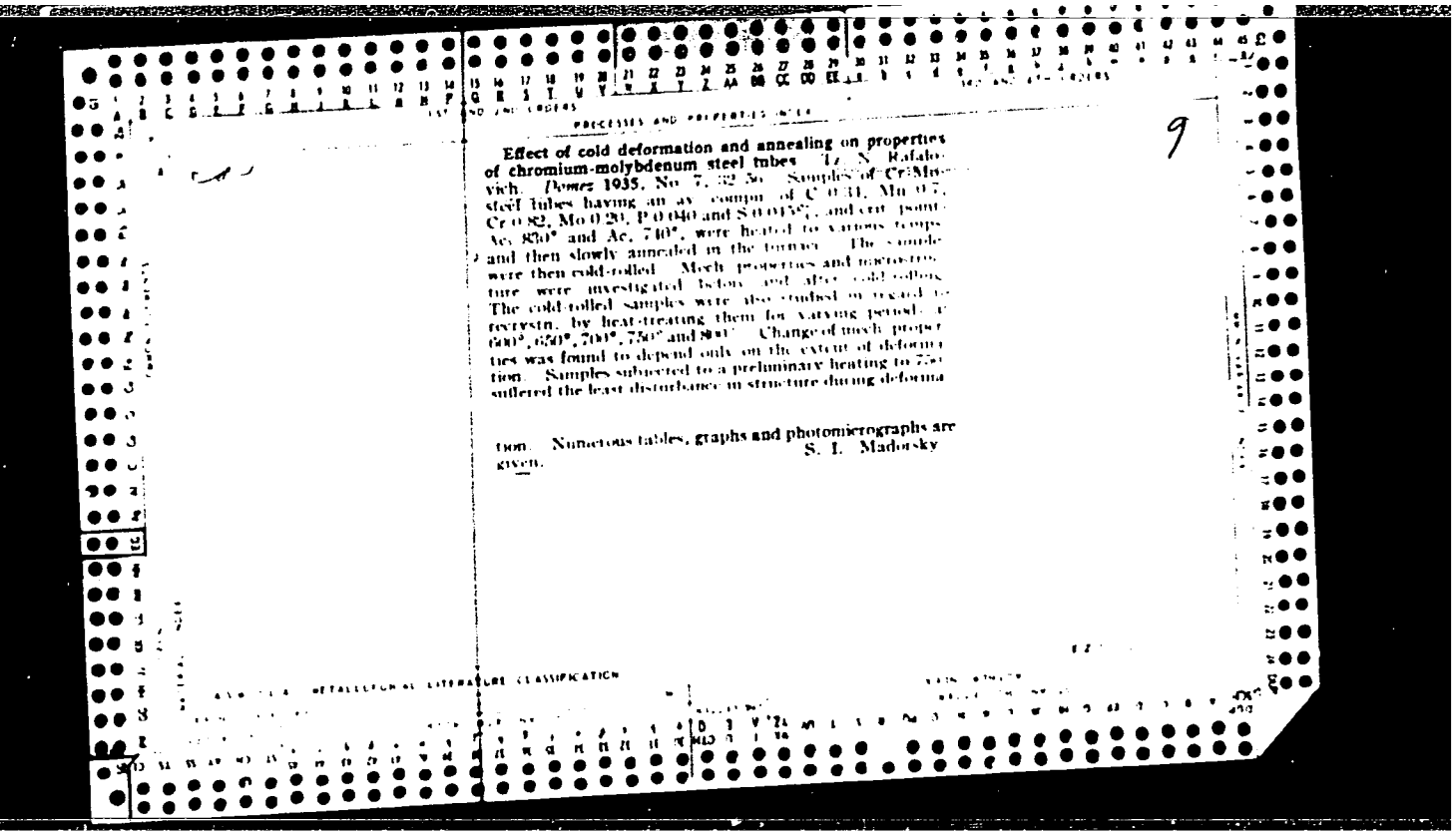
BC

B-I-5

Cause of longitudinal cracks on the surface of finished [steel] products. A. I. NATSCHALNUI and T. N. RAFALOVITSCH (Domez, 1935, No. 7, 17—26).—Cracks on the surface of steel products can be explained exclusively as a result of bursting of gas bubbles during rolling, in cases where liquation or decarburised areas are found in the immediate neighbourhood of the cracks. In absence of such areas the cracks can be explained as due to bursting of gas bubbles, or to mechanical strain or scratches resulting from rolling.

CH. ABS. (*r*)

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

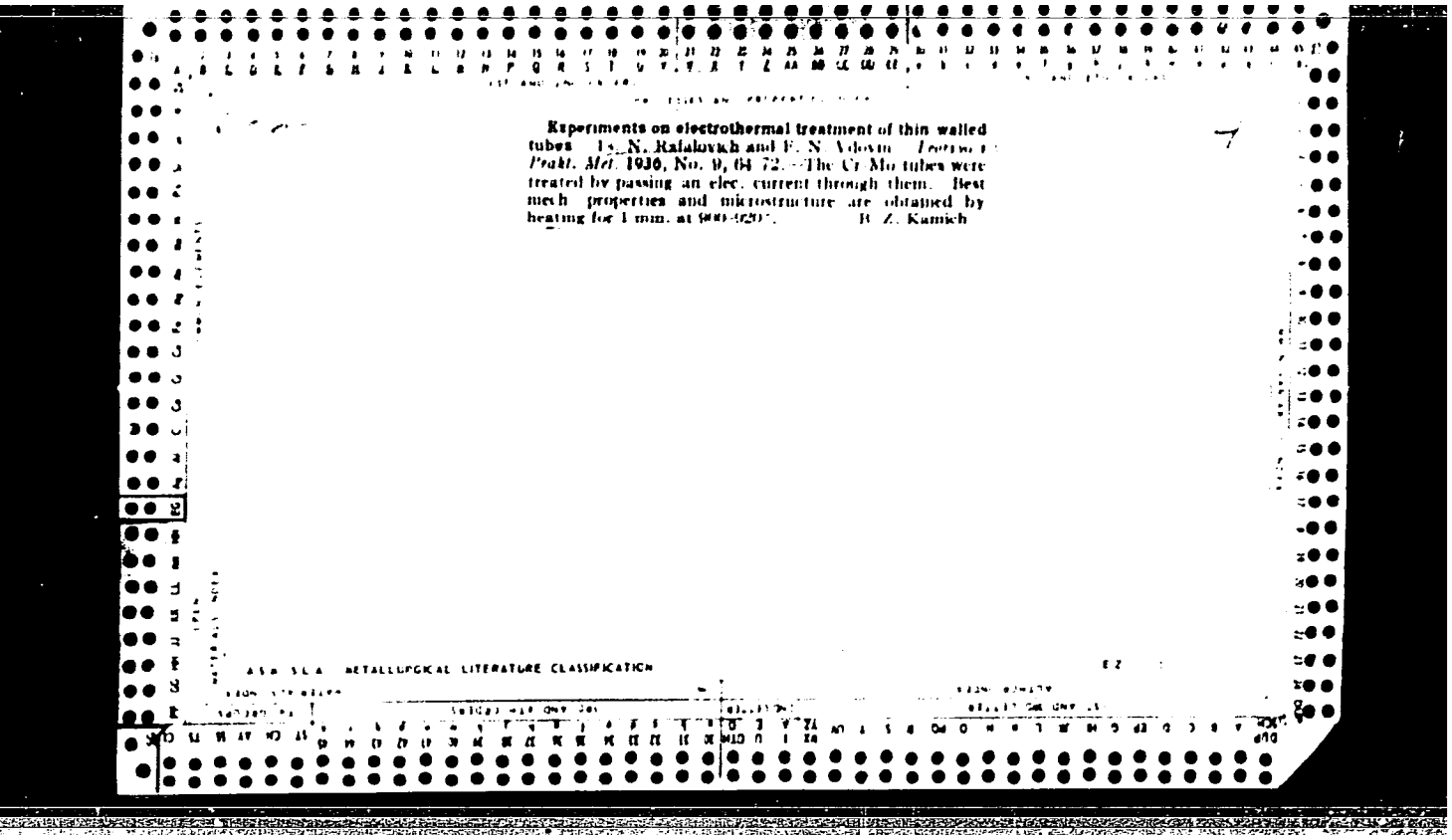


PROCESSES AND PROPERTIES INDEX

9

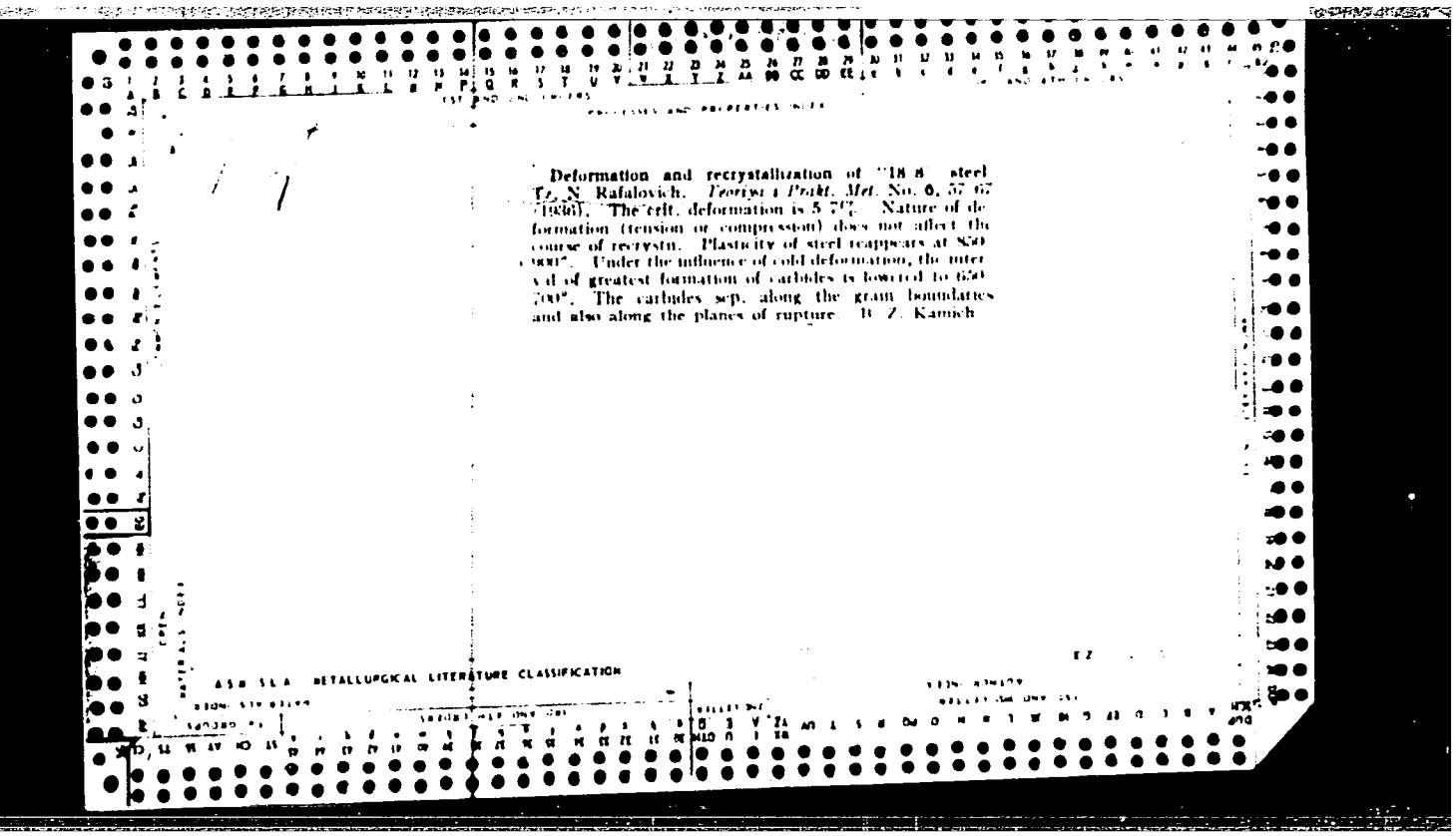
Effect of cold deformation and annealing on properties of chromium-molybdenum steel tubes Iz. N. Rafalo-vich. *Tsvetmet* 1935, No. 7, 32 pp. Samples of Cr-Mo steel tubes having an av. compn. of C 0.31, Mn 0.7, Cr 0.82, Mo 0.20, P 0.040 and S 0.015%, and cut point Ac. 830° and Ac. 740°, were heated to various temps. and then slowly annealed in the furnace. The samples were then cold-rolled. Mech. properties and microstructure were investigated before and after cold rolling. The cold-rolled samples were also studied in regard to recrystn. by heat-treating them for varying periods at 600°, 650°, 700°, 750° and 800°. Change of mech. properties was found to depend only on the extent of deformation. Samples subjected to a preliminary heating to 750° suffered the least disturbance in structure during deformation. Numerous tables, graphs and photomicrographs are given.

S. L. Madorsky



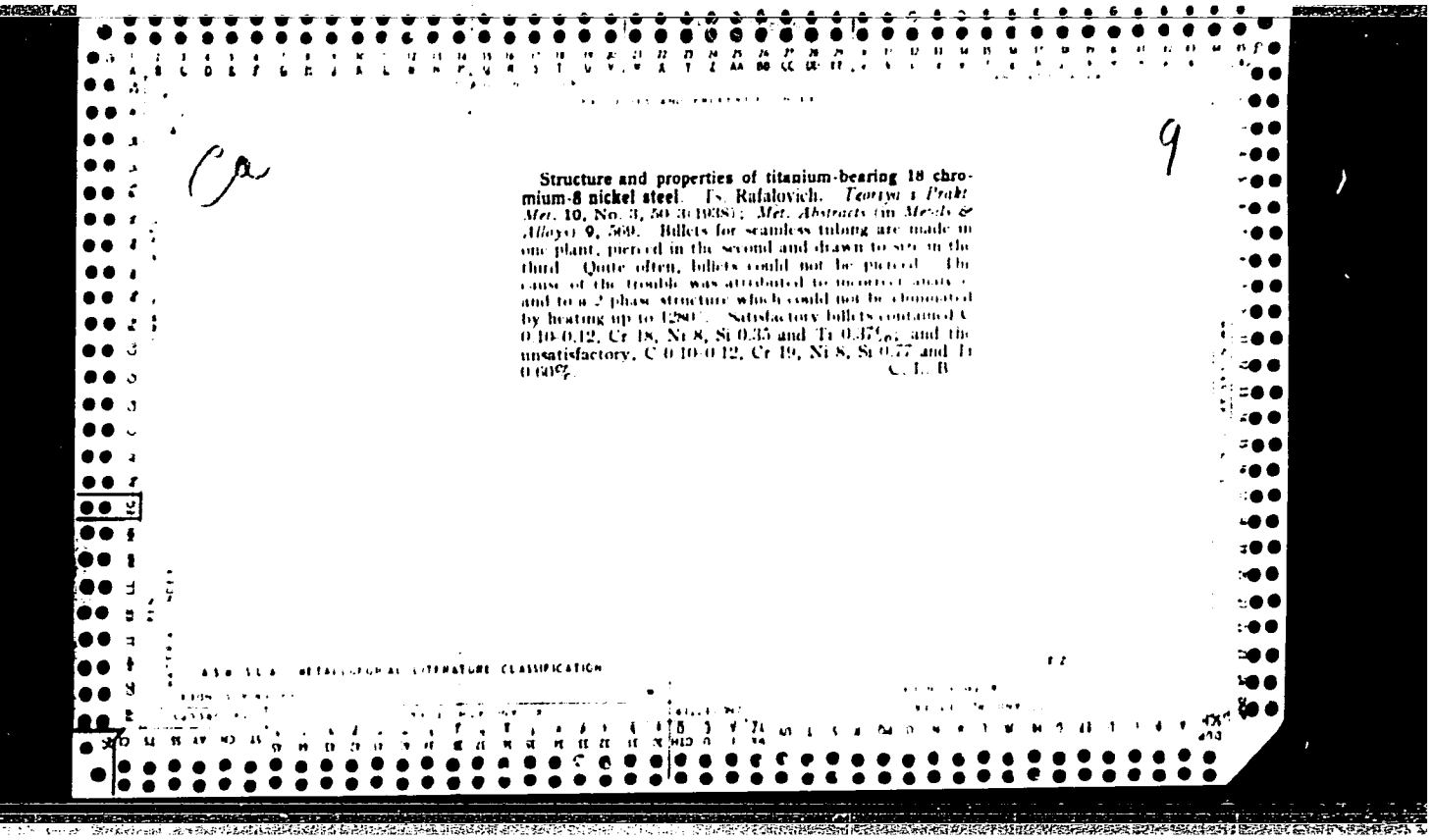
Experiments on electrothermal treatment of thin walled tubes I. N. Rafalovich and F. N. Volosin *Teoriya i Prakt. Met.* 1930, No. 9, 64-72.—The Cr Mo tubes were treated by passing an elec. current through them. Best mech. properties and microstructure are obtained by heating for 1 min. at 900-920°. B. Z. Kamich

METALLURGICAL LITERATURE CLASSIFICATION

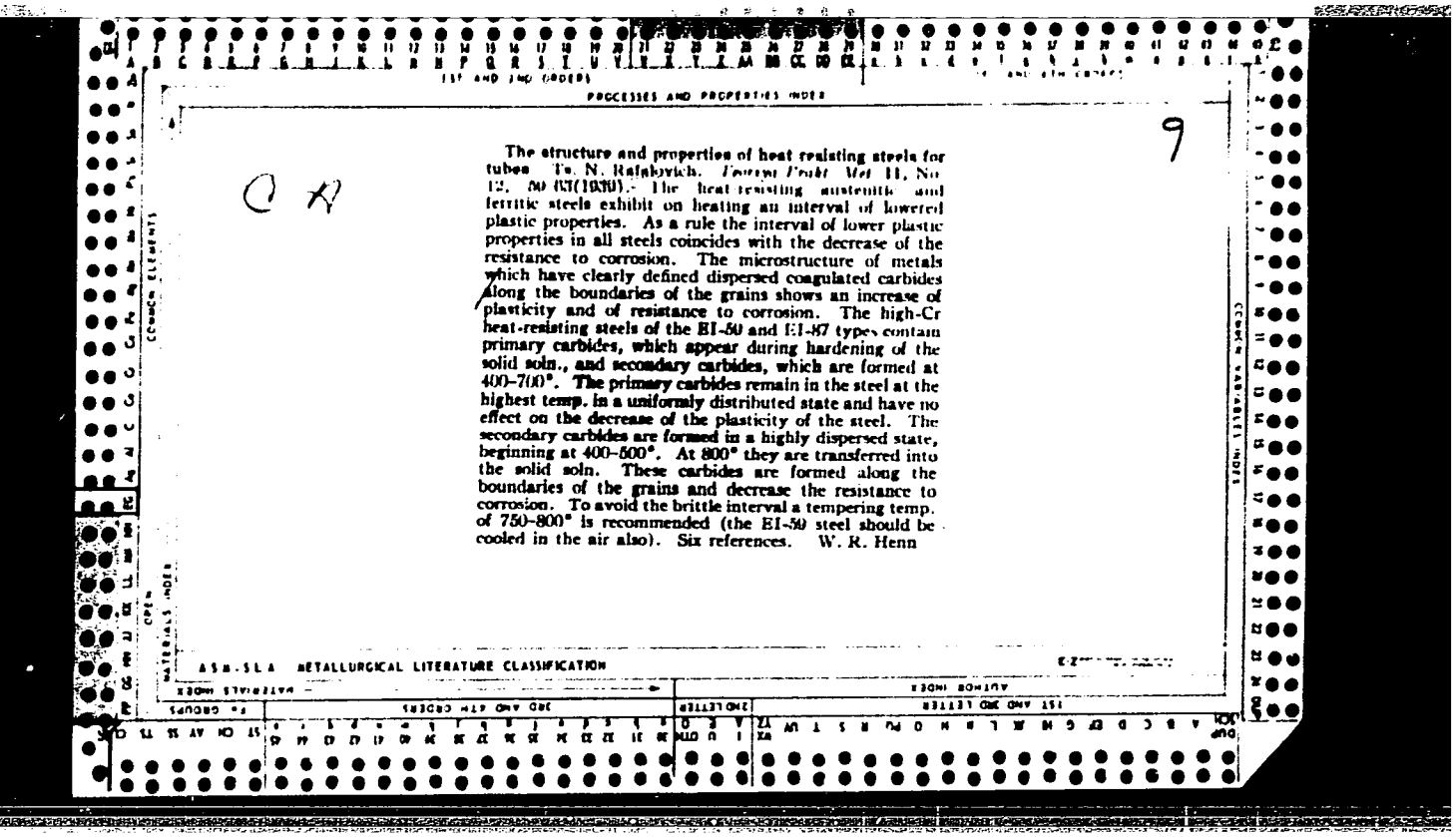


Deformation and recrystallization of "18-8" steel. Fr. N. Rafalovich. *Teoriya i Prakt. Met.* No. 6, 57-67 (1936). The crit. deformation is 5-7%. Nature of deformation (tension or compression) does not affect the course of recrystn. Plasticity of steel reappears at 850-900°. Under the influence of cold deformation, the interval of greatest formation of carbides is lowered to 650-700°. The carbides sep. along the grain boundaries and also along the planes of rupture. B. Z. Kamich

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



Structure and properties of titanium-bearing 18 chromium-8 nickel steel. Ts. Rafalovich. *Tsvetnyi i Prakt. Met.* 10, No. 3, 50-3 (1938); *Met. Abstracts* (in *Metals & Alloys*) 9, 569. Billets for seamless tubing are made in one plant, pierced in the second and drawn to size in the third. Quite often, billets could not be pierced. The cause of the trouble was attributed to incorrect heat-treatment and to a 2 phase structure which could not be eliminated by heating up to 1280°. Satisfactory billets contained C 0.10-0.12, Cr 18, Ni 8, Si 0.35 and Ti 0.47%; and the unsatisfactory, C 0.10-0.12, Cr 19, Ni 8, Si 0.77 and Ti 0.60%. C. L. B

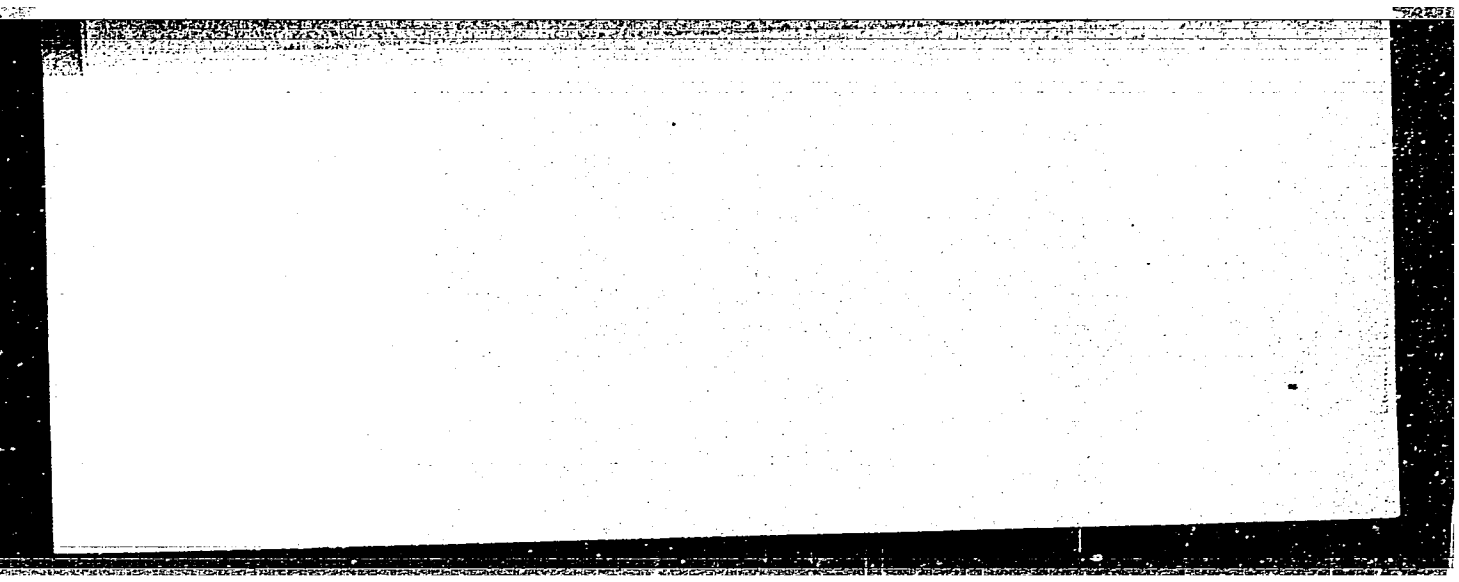


PROCESSES AND PROPERTIES INDEX

9

The structure and properties of heat resisting steels for tubes. Ya. N. Rafalovich. *Tsvetn. Metall. Met.* 11, No. 12, 80-83(1939).- The heat resisting austenitic and ferritic steels exhibit on heating an interval of lowered plastic properties. As a rule the interval of lower plastic properties in all steels coincides with the decrease of the resistance to corrosion. The microstructure of metals which have clearly defined dispersed coagulated carbides along the boundaries of the grains shows an increase of plasticity and of resistance to corrosion. The high-Cr heat-resisting steels of the EI-50 and EI-87 types contain primary carbides, which appear during hardening of the solid soln., and secondary carbides, which are formed at 400–700°. The primary carbides remain in the steel at the highest temp. in a uniformly distributed state and have no effect on the decrease of the plasticity of the steel. The secondary carbides are formed in a highly dispersed state, beginning at 400–500°. At 800° they are transferred into the solid soln. These carbides are formed along the boundaries of the grains and decrease the resistance to corrosion. To avoid the brittle interval a tempering temp. of 750–800° is recommended (the EI-50 steel should be cooled in the air also). Six references. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001344010010-7"

Category : USSR/Solid State Physics - Structure of Deformable Materials E-8

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 5752

Author : Refalovich, Ts.K.
Inst : Dnepropetrovsk Metallurgical Institute, USSR.
Title : Recrystallization Parameters in Induction Heating

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 2, 259-269

Abstract : Recrystallization parameters were studied microscopically in MS-10 low carbon steel. The deformation was performed by cold rolling hollow cylindrical specimens in several passages without intermediate annealing. The total deformation was 52%. The specimens were heated in a seltpeter bath and in an induction furnace. The average speed of heating in the seltpeter was 40°/minute and in induction heating 500°/second. The heating curves of the specimens were recorded with an oscillograph. At the higher heating speed, the recrystallization parameters at all temperatures exceed considerably the same parameters at the relatively low heating speeds. The maximum values of these parameters in

Card : 1/2

RAFAL'OVICH, Ts.N.

FIZIKA METALLOV I METALLOVEDENIE

Physics of Metals and Metallography

Vol 2, Nr 2, 1956

Signed for print April 29, 1956

Recrystallization parameters in the case of induction heating. Much attention is being paid to the mechanism and kinetics of phase transformations during high speed heating. However, investigation of the kinetics of recrystallization processes as a function of the speed of heating, particularly for induction heating, has so far attracted little attention. In this paper results are described of experimental determination of the recrystallization parameters (speed of nuclei formation and speed of growth) of cold worked low carbon steel during induction heating and heating at relatively low speeds. The obtained data were analysed for the purpose of detecting the peculiarities of the kinetics of recrystallization during high speed induction heating. The tested steel had the following composition: 0.15% C; 0.45% Mn; 0.51% Si; 0.03% S;

RECRYSTALLIZATION PARAMETERS IN THE CASE OF ...

0.03% P. At high heating speeds by means of high frequency currents the absolute values of the speed of deformation of crystallization centres and of their growth exceeds at all temperatures the respective values obtained during small heating speeds; the highest values are attained at the initial instant of the holding time. The decrease of the parameters with increasing holding times shows a hyperbolic dependence, whilst in the case of slow heating it is proportional to the holding time. The activation energy of the recrystallization process, calculated from the values of the speeds of nuclei formation and growth, can be expressed for high speed inductional heating by the value 15000 - 20000 cal/g at. and for low speed heating by 60000 to 70000 cal/g at. It can be assumed that, in the case of high speed heating, energy conditions are created in which "internal resources" form which reduce the magnitude of the additional external energy required for overcoming the energy barriers and producing centres of recrystallization and growth. In the case of high speed heating by high frequency currents these resources may increase on account of increasing energy levels of the atoms of the inclusions in the process of multiple remagnetization, producing changes in the domain orientations.

2/3

RECRYSTALLIZATION PARAMETERS IN THE CASE OF...

Instantaneous formation of a large number of recrystallization centres during elimination of superfluous vacancies occurs at the very first instant of the heating and this determines the kinetics of the recrystallization process. Then the process attenuates rapidly since with a considerable decrease of the concentration of the superfluous vacancies the coefficient of self-diffusion decreases sharply.

By Ts. N. Rafalovich.

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Rafalovich, Ts. N.

Recrystallization structure of cold-drawn steel. Ts. N. Rafalovich (Met. Inst., Dnepropetrovsk). *Fiz. Metal. i Metalloved., Akad. Nauk. S.S.S.R.*, 3, 325–31(1956).—Pipes made of plain C (0.10%) steel annealed at 650° and of 18 Cr-8 Ni alloys water-quenched from 1050° were cold-worked and their structure detd. by x-rays and pole figures in the cold-drawn state, after conventional heating to recrystn. temp. and after heating it at 500°/sec. A correspondence of the orientation between the new grains and the original was sought. The character of cryst. orientation of the new structure is entirely identical with the deformed matrix. The characteristic feature of orientation caused by rapid heating is the closeness of the two basic orientations (112) and (111). With a high-recrystn. velocity a dispersion of the crystallites of the deformed matrix occurs around the basic (112) orientation, though only to a small angle. The origin of the (111) [101] orientation from the original (112) [110] can be conceived in the light of a 20° rotation around the 110 direction. Less expressed orientations (110) [110] and (110) [112] are located at 40° to the basic and at an angle of 55° between themselves, which, apparently, limits their development on rapid heating. J. D. Gat

Rafalovich, Ts. N.

USSR/Physics - Steel, Deformation texture FD-906

Card 1/1 Pub. 153-15/26

Author : Rafalovich, Ts. N.

Title : Deformation texture of pipes made of stainless and heat-resistant steel

Periodical : Zhur. tekh. fiz. 24, 1282-1287, Jul 1954

Abstract : Studies changes in deformation texture of pipes cold-drawn or cold-rolled out of 1Kh18N9T and Kh28 steels. The content of alloying elements in both steels predetermined the obtaining of alpha and gamma solid solutions at room temperature in the presence of chromium and titanium carbides. Illustrations; three references.

Institution : --

Submitted : July 30, 1953

Evaluation B-82733

RAFALOVICH, TS.N.

Recrystallization parameters in induction heating. Fiz.met. i metalloved. 2 no.2:259-269 '56. (MLRA 9:9)

1.Dneprepetrovskiy metallurgicheskiy institut imeni I.V.Stalina.
(Steel alloys--Heat treatment)

80594
S/148/60/000/005/003/009

18.8200

AUTHOR: Rafalovich, Ts.N.

TITLE: The Correlation Between Elements of Fine Crystalline Structure and Ductility of Steel at Raised Temperatures

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1960, Nr 5, pp 81 - 84

TEXT: The author investigated the correlation between the thin crystalline structure and changes in ductility of steel during deformation by hot and cold drawing of 30XГCA (30KhGSA) and 10 grade steel pipes. The experiments were carried out with the consultation of K.F. Starodubov. Prior to drawing the hot rolled pipes were subjected to induction heating directly on the draw bench up to the temperature of recrystallization annealing; after drawing they were water or air-cooled. The specimens were then subjected to X-ray examination according to methods developed by G.V. Kurdyumov and L.I. Lysak [Ref 2]. It is shown (Figure 1) that in hot drawing of 10 grade steel pipes considerable relaxation of stress takes place in spite of the short deformation period (about 0.2 sec). It can be admitted that the

Card 1/2

RAFALOVICH, TS.N., kand. tekhn. nauk.

Efficient temperature for hardening cold worked 1Kh18N9T steel.
Metalloved. i obr. met. no.12:69-72 D '57. (MIRA 11:1)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Steel--Heat treatment)

RAFALOVICH, Ts. N.

Category : USSR/Solid State Physics - Structure of Deformable Materials F-8

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6752

Author : Rafalovich, Ts.N.
Inst : Dnepropetrovsk Metallurgical Institute, USSR.
Title : Recrystallization Parameters in Induction Heating

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 2, 259-269

Abstract : Recrystallization parameters were studied microscopically in MS-10 low carbon steel. The deformation was performed by cold rolling hollow cylindrical specimens in several passages without intermediate annealing. The total deformation was 52%. The specimens were heated in a saltpeter bath and in an induction furnace. The average speed of heating in the saltpeter was 40°/minute and in induction heating 500°/second. The heating curves of the specimens were recorded with an oscillograph. At the higher heating speed, the recrystallization parameters at all temperatures exceed considerably the same parameters at the relatively low heating speeds. The maximum values of these parameters in

Card : 1/2

RAFALOVICH, TS.N.

3
1

Distr: 4E2e 18 18

The Recrystallization Texture of Cold Drawn Steels. Ts. N. Rafalovich. (*Fizika Metallov i Metallovedenie*, 1956, 1, (2), 325-331). [In Russian]. During the recrystallization treatment of steels the newly appearing grains possess an orientation identical with the deformed matrix within which they appeared. The main orientation of the crystals in the deformed texture of the matrix is maintained in the recrystallization texture, the degree, only, of the scattering around it is different.—L. E.

Rafalovich, Ts. N.

129-12-11/11

AUTHOR: Rafalovich, Ts. N., Candidate of Technical Sciences.

TITLE: Proper hardening temperature of the Steel 1X18H9T after deformation in the cold state. (Ratsional'naya temperatura zakalki kholodnodeformirovannoy stali 1Kh18N9T)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1957, No.12, pp. 69-72 (USSR)

ABSTRACT: During manufacture of wire, thin walled tubes and of some other semi-finished goods from the Steel 1X18H9T hardening from 1100 to 1150°C in water is applied for re-establishing the plastic properties of the metal after deformation in the cold state. Multiple repeated heating to such high temperatures involves considerable losses of time and increased costs. The here described investigations aimed to show that the temperature of intermediate hardening can be considerably reduced. The tests were made with steel containing 0.11% C, 17.8% Cr, 9.9% Ni, 0.5% Mn, 0.45% Si, 0.51% Ti, 0.03% S and 0.03% P. The deformation in the cold state was effected in three ways, namely, by rolling strip, by drawing tubes on a drawing bench and by rolling tubes in a pilger mill. The total reduction in all cases amounted to 55-60% and was achieved during several passes without intermediate heat treatment; all the specimens

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Proper hardening temperature of the Steel 1X18H9T after deformation in the cold state.

which were deformed in the cold state were hardened in water from various temperatures between 700 and 1200°C. The mechanical properties were determined from tensile tests of segments cut down from tubes. The changes in the structure of the metal and the deformation texture was established by X-ray methods of specimens cut out from strips and tubes and the specimens were ground and etched to a depth of 0.04 mm. The exposures were made in transmitted light applying a tube with a molybdenum anti-cathode utilising the following effects: the appearance of individual points on the interference rings which indicated formation of new crystals of sizes up to 5μ and the change in the blackening intensity along the interference rings caused by changes in the texture. The orientation of the crystals during heating and after deformation was determined by constructing pole figures which, according to earlier work of the author, yield adequately reliable results. In Fig.1 the changes in the mechanical properties of Cr-Ni steel deformed in the cold state as a function of the hardening temperature are

Proper hardening temperature of the Steel 1X18H9T after deformation in the cold state.

graphed and it can be seen from the data given in the Table, p.71, that the existence of a texture prior to deformation in one batch of the tested tubes affected the required pulling force during the first pass. The tests have shown that on heating 1X18H9T Cr-Ni steel, which was deformed in the cold state, the softening occurs whilst a perfect deformation texture is still in existence; the recrystallisation texture forming above 1000°C is less pronounced. In the process of multiple cold drawing of the steel 1X18H9T intermediate annealing should be effected at 900°C at which temperature the plasticity of steel becomes re-established to an adequate extent, although the deformation texture is still maintained.
There are 1 figure, 1 table and 6 references, all of which are Slavic.

ASSOCIATION: Dnepropetrovsk Metallurgical Institute.
(Dnepropetrovskiy Metallurgicheskiy Institut).

AVAILABLE: Library of Congress.

Card 3/3

RAFALOVICH, TS.

4

4E2c

Recrystallization Parameters during Induction Heating. Ts. M. Rafalovich. (*Fizika Metallov i Metallovedenie*, 1956, 2, (2), 259–269). [In Russian]. Experimental determination of recrystallization parameters (velocities of nuclei formation and crystal growth) for cold deformed low-carbon steel during rapid and relatively slow induction heating is described. Some special features of recrystallizations during rapid indyction heating are discussed.—V. G.

RAFALOVICH, Ts.N.

V13223* (Russian) Recrystallization Parameters in Induction Heating. Parametry rekristallizatsii pri induktsionnom nagreve. Ts. N. Rafalovich. *Fizika Metallov i Metallovedenie*, v. 2, no. 2, 1956, p. 259-269.

Determination of grain germination and grain growth rate in cold-worked low-carbon steel, in rapid induction heating and in relatively slow heating.

Metal

1

Of

RAFAL'KES, S. B., SURIS, A. S.

Endocarditis

Early manifestation of septic endocarditis complicating puerperal fever.
Klin. med. 30, No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

RAFAL'KES, S. M., SURIS, A. S.

Puerperal Septicemia

Early manifestation of septic endocarditis complicating puerperal fever.
Klin. med. 30 No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952. Unclassified.

RAFAL'KES, Solomon Borisovich, 1892-

Puerperal infections and diseases

1. Puerperal septicemia.

RAFALSKI, A.

The first balance of the District Association of Township Cooperatives. p. 5. GOSPODARKA ZBOZOWA. Vol. 9, No. 3, Jan 1956 Warszawa.

East European Accessions List (EEAL) Library of Congress Vol. 5, No. 11, August 1956

RAFALOV, M.M., inzh.; SHTUL'BERG, B.M., inzh.

Comparing technical and economic indices of various types of overhead push conveyors. Mekh. i avtom. proizv. 19 no.5:39-45 My '65. (MIRA 18:11)

[redacted],

"[illegible] Possible [illegible] Foot-and-Mouth Disease [illegible] Chloroform Vaccine". Nov. Veterin., 1955, No. 5.

RAFALOVICH, A.

Mine equipment is being improved. Mast.ugl.5 no.3:23-24 Mr '56.
(MLRA 9:7)

1.Direktor Kopeyskogo mashinostroitel'nogo zavoda imeni S.M. Kirova.

(Coal mining machinery)

S/123/61/000/002/008/017
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1961, No. 2, p. 17, # 2V130

AUTHORS: Levin, M. Z., Shumilov, K. D., Leshchinskiy, M. F., Rafalovich, A. I., Dobronog, S. N.

TITLE: The Determination of the Pressures on the Rolls and the Power of the Motor of Roll-Straightening Machines

PERIODICAL: "Tr. Donetsk. industr. in-ta", 1959, No. 36, pp. 5-27

TEXT: Formulae are presented for determining the bending moments, the radii of curvature, the pressure on the rolls, and the power of the motor. A method is given for verifying the calculation formulae by the investigation of the straightening process of 8-20 mm thick sheets on a 7-roll plate-straightening machine. It is suggested to make more precise the calculation of roll-straightening machines by determining the power consumed by each roll to straightening a strip. The power is calculated from the total curvature (removable curvature + curvature of deflection); hereat, the deflection curvature is determined from the experimental magnitude of the depth of curvature, under the assumption that the bent axis of

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S/123/61/000/002/008/017
A005/A001

The Determination of the Pressures on the Rolls and the Power of the Motor of Roll-Straightening Machines

the strip section being straightened by the roll is a circular arc. It is mentioned that the straightening energy is required to both the plastic and elastic deformation of the strip; therefore, the calculation of the power without allowance for the elastic deformation work will be wrong. - There are 9 figures, 2 tables, and 1 reference.

Yu. Semenenko

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

RAFALOVICH, . . I.

Normativy oborotnykh sredstv i bankovskoe kreditovanie parokh. . istov, portov, i predpri . . il morskogo flota. [The revolving funds and banking credits of shipping companies, ports and enterprises of the merchant marine]. Moskva, Morskoi transport 1948.39p. (Bibliotechka po ekonomicheskomu obrazovaniiu dlia komandira morskogo flota). DLC: HE847.R3

So: Soviet Transportation and Communications, A Bibliography, Library of Congress Reference Department, Washington, 1952, Unclassified.

ROYKH, I.L.; RAFALOVICH, D.M.; FRUMKIN, A.N., akademik.

Photoactive particles emitted by metals during atmospheric corrosion. Dokl.AN SSSR 90 no.4:603-606 Je '53. (MLRA 6:5)

1. Akademiya Nauk SSSR (for Frumkin). (Photochemistry) (Corrosion and Anticorrosives)

ROYKH, I.L. (Odessa); RAFALOVICH, D.M. (Odessa)

Production of H_2O_2 by metals as a criterion of atmospheric corrosion [with summary in English]. Zhur. fiz. khim. 31 no.12:2733-2738 D '57. (MIRA 11:4)

1.Odesskiy tekhnologicheskiy institut im. I.V. Stalina.
(Zinc--Corrosion) (Aluminum--Corrosion) (Hydrogen peroxide)

AUTHORS: Roykh, I.L., Rafalovich, D.M.

TITLE: Separation of H_2O_2 by Metals as Criterion of Atmospheric Corrosion (Vydeleniye H_2O_2 metallami kak kriteriy atmosfernoy korrozii).

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 12, pp.2733-2738 (USSR)

ABSTRACT: The effect of the decrease of optical density for the investigation of the temporal dependence of the H_2O_2 separation by metals after purification, as well as for the comparison with the data obtained with the investigation of the kinetics of corrosion according to the weight method was applied here. The tests showed that the amount of this effect depends on the exposure time of the preceding exposure. For investigating this dependence, strips parallel to each other of one and the same photographic plate at constant illumination were exposed during various times. Subsequently, a newly cleaned zinc rod was fixed on the photographic layer vertical to these strips. The optical densities D_1 (there, where the metal was), and D (of the remaining part of the plate) were measured for each strip after developing and the Δ D, the decrease of optical density, was computed. The investigations showed the same course of the curves for the action of metal and H_2O_2. This proves that the effect of a decrease in optical density on the newly cleaned metal depends on the separation of hydrogen

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Separation of H_2O_2 by Metals as Criterion of Atmospheric Corrosion

76-12-20/27

peroxide at atmospheric corrosion. Curves for the separation of hydrogen peroxide by newly purified aluminum and zinc were plotted for the intervals from 1 up to 10 days. These curves plotted photographically coincide with those for the increase of the thickness of the layer of oxide, which were obtained by Vernon Refs.6-7 according to the weight method. It is shown that various equations which express the dependence with respect to time of the separated quantity of hydrogen peroxide, or of the thickness of the layer of oxide respectively, correspond to the various stages of metal oxidation. The tests were carried out at 20° C and a relative humidity of from 65 to 75%. From the obtained data results that a parabolic relation of the form $n^2=k_3 t+k_4$ exists with an interval of from 1 to 24 hours from the beginning of oxidation. The analogous tests within the interval of from 1 to 10 days showed a logarithmic course of the dependence of the form: $n=k_5 \lg t + k_6$. There are 7 figures, and 7 references, 4 of which are Slavic.

ASSOCIATION: Odessa Institute of Technology imeni I.V.Stalin (Odesskiy tekhnologicheskiy institut im. I.V.Stalina).

SUBMITTED: October 5, 1956

AVAILABLE: Library of Congress

Card 2/2

Separation of H_2O_2 by Metals as Criterion of Atmospheric Corrosion

76-12-20/27

peroxide at atmospheric corrosion. Curves for the separation of hydrogen peroxide by newly purified aluminum and zinc were plotted for the intervals from 1 up to 10 days. These curves plotted photographically coincide with those for the increase of the thickness of the layer of oxide, which were obtained by Vernon Refs.6-7 according to the weight method. It is shown that various equations which express the dependence with respect to time of the separated quantity of hydrogen peroxide, or of the thickness of the layer of oxide respectively, correspond to the various stages of metal oxidation. The tests were carried out at 20° C and a relative humidity of from 65 to 75%. From the obtained data results that a parabolic relation of the form $n^2=k_3 t+k_4$ exists with an interval of from 1 to 24 hours from the beginning of oxidation. The analogous tests within the interval of from 1 to 10 days showed a logarithmic course of the dependence of the form: $n=k_5 \lg t + k_6$. There are 7 figures, and 7 references, 4 of which are Slavic.

ASSOCIATION: Odessa Institute of Technology imeni I.V.Stalin (Odesskiy tekhnologicheskiy institut im. I.V.Stalina).

SUBMITTED: October 5, 1956

AVAILABLE: Library of Congress

Card 2/2

ROYKH, I.L.; RAFALOVICH, D.M.

Double replacement phenomena in the action of freshly polished metals on photosensitive layers. Ukr. khim. zhur. 24 no. 2:198-201 '58. (MIRA 11:6)

1. Odesskiy tekhnologicheskiy institut im. Stalina, kafedra fiziki.
(Metals--Corrosion)
(Photographic chemistry)

The effect of relative humidity ....

in corrosion was observed after attaining "critical humidity". This increase was explained by the formation of an electrolyte film on the surface, effecting a change from pure chemical to electrochemical corrosion. In prior investigations (Ref. 7: DAN SSSR, 90, 603, 1953; Ref. 8: DAN SSSR, 94, 1117, 1954; Ref. 9: DAN SSSR, 108, 1102, 1954; Ref. 10: ZhFKh, 31, 2733, 1957) the present authors observed the photographic effect of metals caused by the evolution of H_2O_2 during corrosion. Subsequent experiments showed a linear function between the growth of the oxide film and the amount of H_2O_2 formed in atmospheric corrosion of magnesium and aluminum. Thus corrosion can be controlled by estimating the H_2O_2 evolution process. This was the principle of the present investigation. Spectrally pure aluminum (Si 0.0016 %, Fe 0.0016 %, Cu 0.001 %) and magnesium (Fe 0.004 %, Si 0.009 %, Mn 0.0021 %) were used in the experiments and no agressive media were introduced. The photographs were made with isochromatic reproduction supercontrast photoplates (sensitivity 1.4 ГОСТ (GOST)). Blackening increased by preparing the plates successively with 4 % Na_2CO_3 solution (4 minutes) and 50 % ethanol (1 minute) with subsequent drying (10 minutes) at 100°C. Constant humidity φ was secured by placing a NaOH solution of a corresponding concentration (c_{NaOH} = 48, 41, 33, 27, 13 % corresponds to φ = 15, 30, 45, 60, 75, 90 %)

Card 2/6

The effect of relative humidity ....

on the bottom of the cylindrical hermetically closed glass box, where the experiments were carried out. After exposure to the H_2O_2 evolved by the sample at a certain humidity in the test box, the photoplates were developed and the optical density D of the blackening was determined. The dependence of the optical density D of the photoplate blackening after exposure to a solution of H_2O_2 of a certain concentration at a certain humidity was determined and corresponding curves were plotted. From these curves and values obtained with metals the dependence of the evolved H_2O_2 amount p on was estimated (Figure 4). The observed increase in p with is in agreement with literature data (Ref. 1,2,4) indicating an increase in the oxide film with increasing . In the present investigations also the amount p of H_2O_2 evolved from the metals during corrosion at varying was determined and the results are shown in Figure 5, demonstrating that for = 0 - 90 %, log p = a + b (where a and b are different for the interval 0 - 30 % and for 30 - 90 %). These results are in agreement with data given by N., D. Tomashov and A. A. Lokotilov (Ref. 15: Sb. "Korroziya i zashchita staley" ("Corrosion and protection of steel") Mashgizdat 158, 1959). Kinetics of H_2O_2 evolution were studied during the first 6 hours of corrosion for = 0,15, 30, 45 and 60 %. The amount of H_2O_2 formed during the first 15 minutes was considered as unit in these experiments. The obtained results plotted in squares of the formed H_2O_2

Card 3/6

The effect of relative humidity ....

amount versus corrosion time are shown in Figures 8, 9. For φ = 60 % the parabolic equation $p^2 = kt$ (2) is valid while for $\varphi < 60$ % the function shows two segments. Approximately for 0 - 3 hours of corrosion equation (2), and for 3 - 6 hours equation $p^2 = k_1 t + k_2$ (3) is valid. There are 9 figures and 15 references: 12 Soviet-bloc and 3 non-Soviet-bloc.

SUBMITTED: August 1, 1960

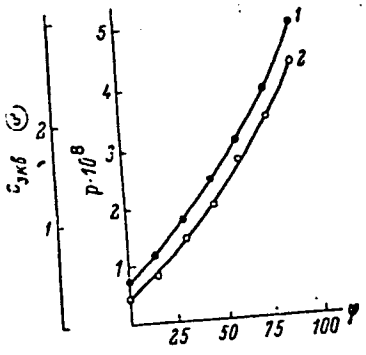


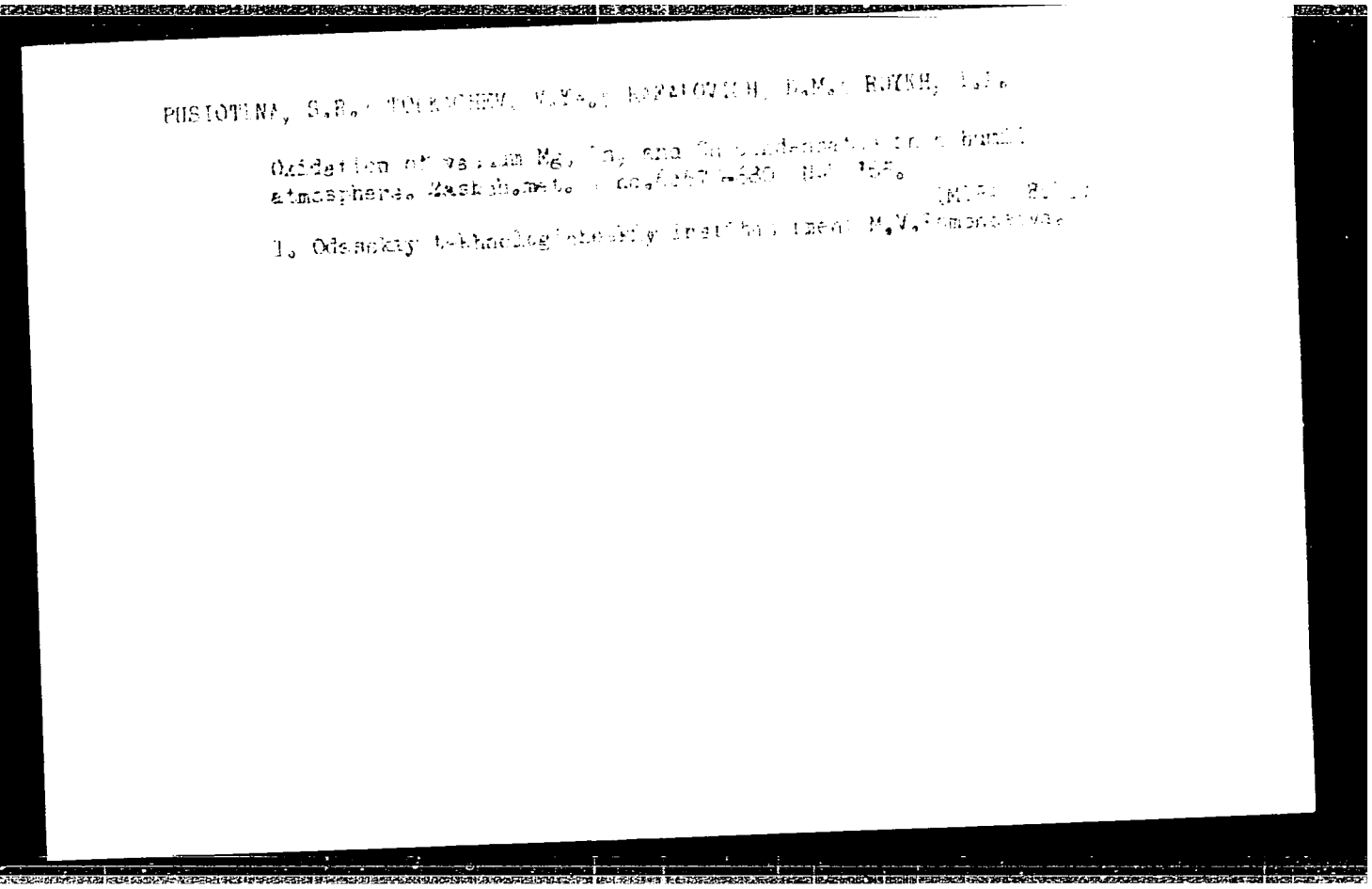
Figure 4: Dependence of the amount ($p \cdot 10^8$, g/cm^2) and concentration (c_{equiv} %) of hydrogen peroxide evolved from the metals during the first 15 minutes of oxidation on relative humidity φ (%). 1 - magnesium, 2 - aluminum, 3 - c_{equiv}.

Card 4/6

ROYEH, L.I.; RAFALOVICH, D.M.

Relation between the weight increase of the oxide film and the amount of H_2O_2 evolved in the atmospheric corrosion of magnesium. Zhur. fiz. khim. 36 no.6:1198-1201 Je '62 (MIRA 17:7)

1. Odesskiy tekhnologicheskiy institut.



L 46996-66 EWP(j)/EWT(m)/T IJP(c) RM/WW

ACC NR: AP6027287 (A) SOURCE CODE: UR/0191/66/000/008/0072/0073

38
36
B

AUTHOR: Kononchik, Ye. T.; Rafalovich, D. M.; Roykh, I. L.

ORG: none

TITLE: Oxidation of polymers in air during mechanical degradation

SOURCE: Plasticheskiye massy, no. 8, 1966, 72-73

TOPIC TAGS: peroxide, polyethylene, polystyrene, polycaprolactam, polymer degradation

ABSTRACT: The mechanical degradation of polymers may cause chemical reactions which evolve volatile substances, in particular, peroxy compounds. A photographic method was used to study the amount of volatile substances evolved during the mechanical degradation of low-pressure polyethylene, polystyrene, polycaprolactam and vulcanized rubber in air. The substances evolved caused a darkening on a photographic plate when it came in contact with its emulsion, and the degree of darkening was proportional to the amount of the substance. The composition of the volatile substances was identified by means of chemical indicators commonly employed for H_2O_2 and by a luminescent method (luminol). The liberated organic peroxides (tert-butyl peroxyacetate, tert-butyl peroxybenzoate, caproic peroxide, tert-butyl hydroperoxide and cumene hydroperoxide) had the same effect on the chemical and luminescent indicators as did H_2O_2 and, like the latter, darkened the photographic plate. Teflon samples

Card 1/2 UDC: 678.019.31 : [678.742.2+678.746.22+678.675'126+678.44

ACC NR: AP6027287

did not darken the photographic plate, indicating that hydrogen atoms must be available in the polymer for peroxides to be formed. Authors thank S. Ye. Bresler and P. Yu. Butyagin for their participation in the discussion of the results. Orig.art. has: 3 figures.

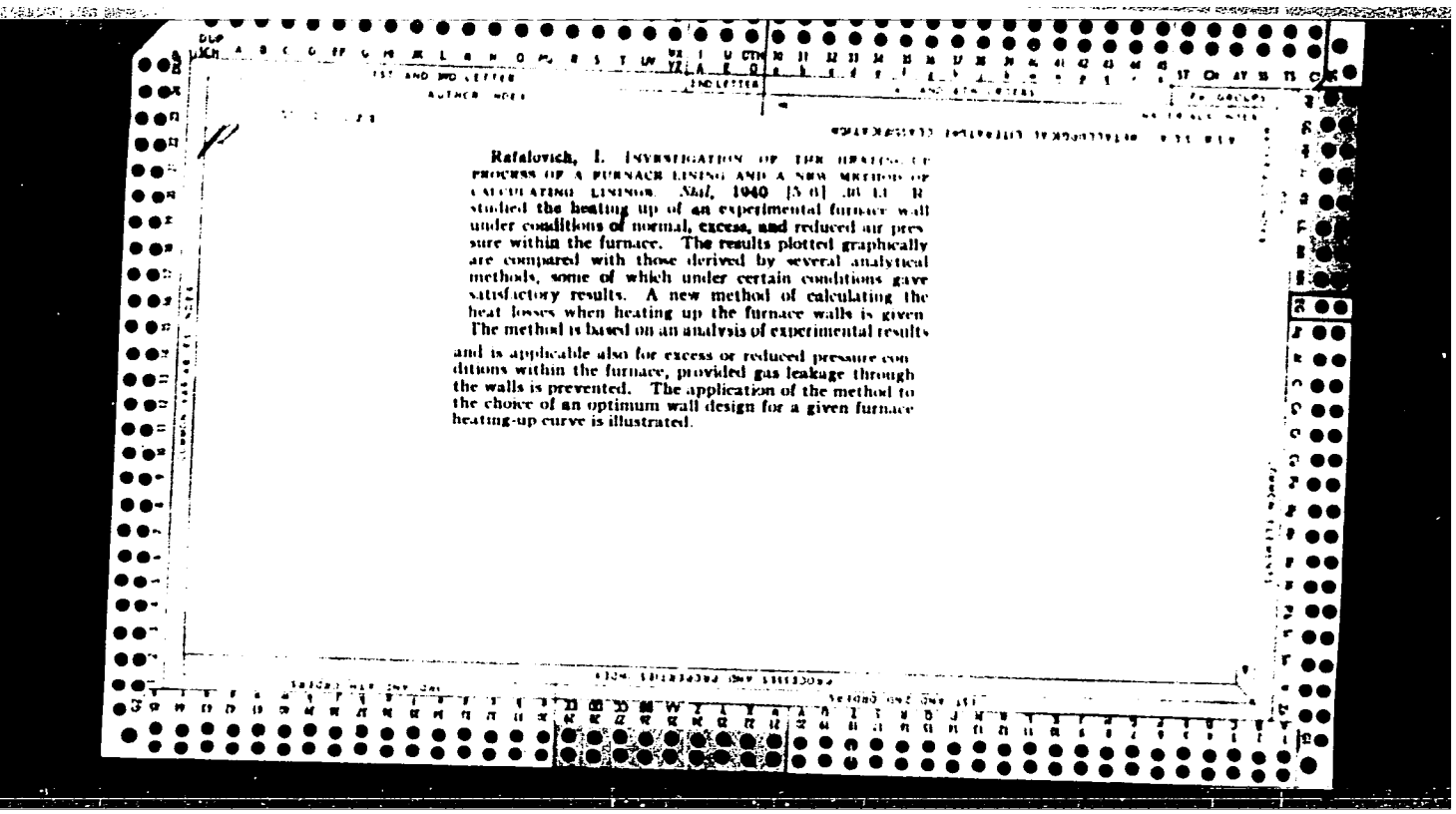
SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

Card 2/2

DOMBROVSKA-GAVDA, H. [Dabrowska-Gawda, H.]; RAFALOVICH, E. [Rafalowicz, E.]; SULKOVSKI, Ch. [Sulkowski, Cz.]

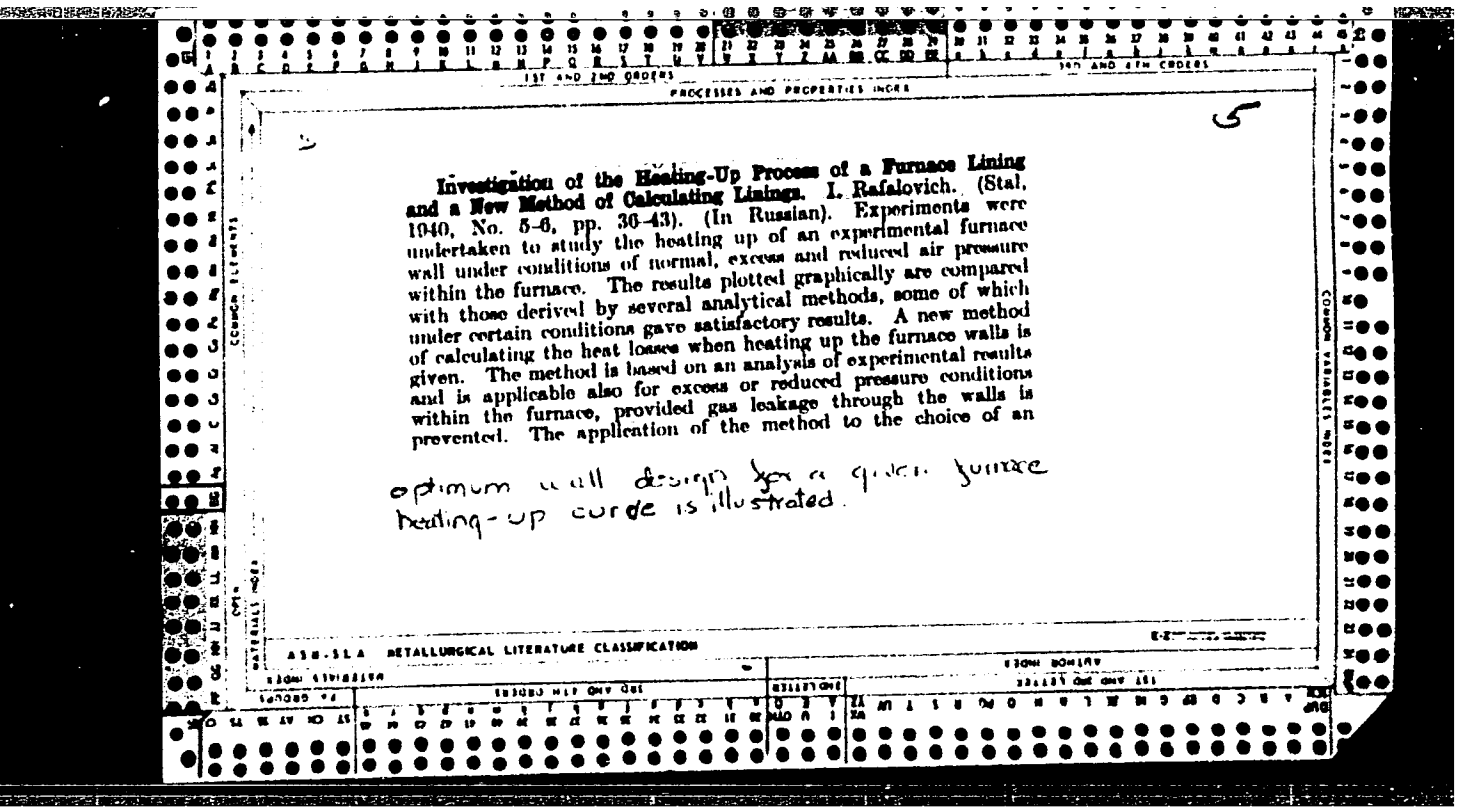
Measurement of the specific strength of threadlike single crystals (whiskers) of copper depending on temperature. Acta physical Pol 23 no.6:663-672 Je '63.

1. Kriogennaya Laboratoriya Polskoy Akademii Nauk, Vrotslav.



Rafalovich, I. INVESTIGATION OF THE HEATING UP PROCESS OF A FURNACE LINING AND A NEW METHOD OF CALCULATING LININGS. *Stal*, 1940 [5-6] 30-41 R

studied the heating up of an experimental furnace wall under conditions of normal, excess, and reduced air pressure within the furnace. The results plotted graphically are compared with those derived by several analytical methods, some of which under certain conditions gave satisfactory results. A new method of calculating the heat losses when heating up the furnace walls is given. The method is based on an analysis of experimental results and is applicable also for excess or reduced pressure conditions within the furnace, provided gas leakage through the walls is prevented. The application of the method to the choice of an optimum wall design for a given furnace heating-up curve is illustrated.



PROCESSES AND PROPERTIES INDEX

5

Investigation of the Heating-Up Process of a Furnace Lining and a New Method of Calculating Linings. I. Rafalovich. (Stal, 1940, No. 5–6, pp. 36–43). (In Russian). Experiments were undertaken to study the heating up of an experimental furnace wall under conditions of normal, excess and reduced air pressure within the furnace. The results plotted graphically are compared with those derived by several analytical methods, some of which under certain conditions gave satisfactory results. A new method of calculating the heat losses when heating up the furnace walls is given. The method is based on an analysis of experimental results and is applicable also for excess or reduced pressure conditions within the furnace, provided gas leakage through the walls is prevented. The application of the method to the choice of an optimum wall design for a given furnace heating-up curve is illustrated.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

SOKOLOV, I.I.; RAFALOVICH, I.A.

Bison in Moldavia. Biul. MOIP. Otd. biol. 66 no.3:144-146 My-Je '61. (MIRA 14:6)

(KODRY--BISON, FOSSIL)

LIVSHITS,E.M., inzhener; PONIZOVSKIY,M.M., inzhener; KHARKIN,Yu.A., inzhener; LOGINOV,B.I., inzhener; RAFALOVICH,I.I., inzhener; STEPANOV,G.G., inzhener; KOZYAKIN,A.N., inzhener; RABINOV,B.S., inzhener

Air leaks in convective shafts of boiler installations. Elek.sta.26 no.10:38-47 O '55. (MLRA 8:12)

1. Glavnoye upravleniye elektrostantsiy i elektrosetey Urala i Vostoka Ministerstva elektrostantsiy (for Loginov) 2. Rostovenergo (for Rafalovich) 3. Rostovenergoremont (for Stepanov) 4. Leningradskaya elektroenergeticheskaya sistema (for Kozyakin and Rabinov)
(Boilers)

AID P - 3771

Card 1/1 Pub. 26 - 13/29

Authors : Loginov, B. I., Eng., Glavvostokenergo, I. I. Rafalovich, Eng., Rostovenergo, G. G. Stepanov, Eng., Rostovenergoremont, A. N. Kozyakin, Eng. and B. S. Rabinov, Eng., Lenenergo

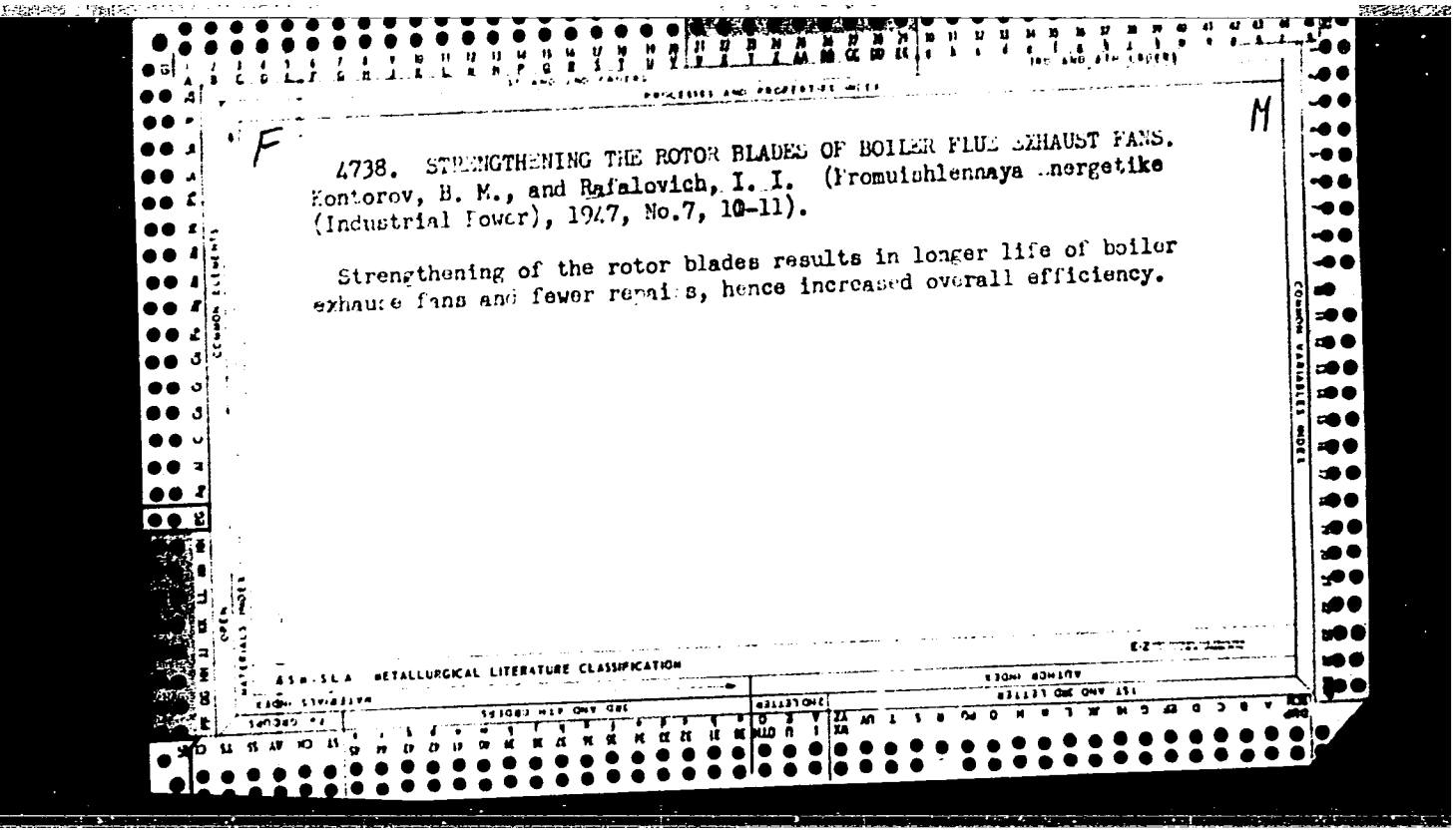
Title : Air indraft in convection shafts of boiler aggregates (Discussion)

Periodical : Elek. sta., 10, 44-47, O 1955

Abstract : The authors discuss the article of E. M. Livshits, M. M. Ponizovskiy, and Yu. A. Kharkin (this journal No. 10, O 1955) as concerns certain technical details of a tight construction of ducts in boiler aggregates. They suggest solutions based on their own operational experience. Four drawings.

Institutions: See Authors

Submitted : No date

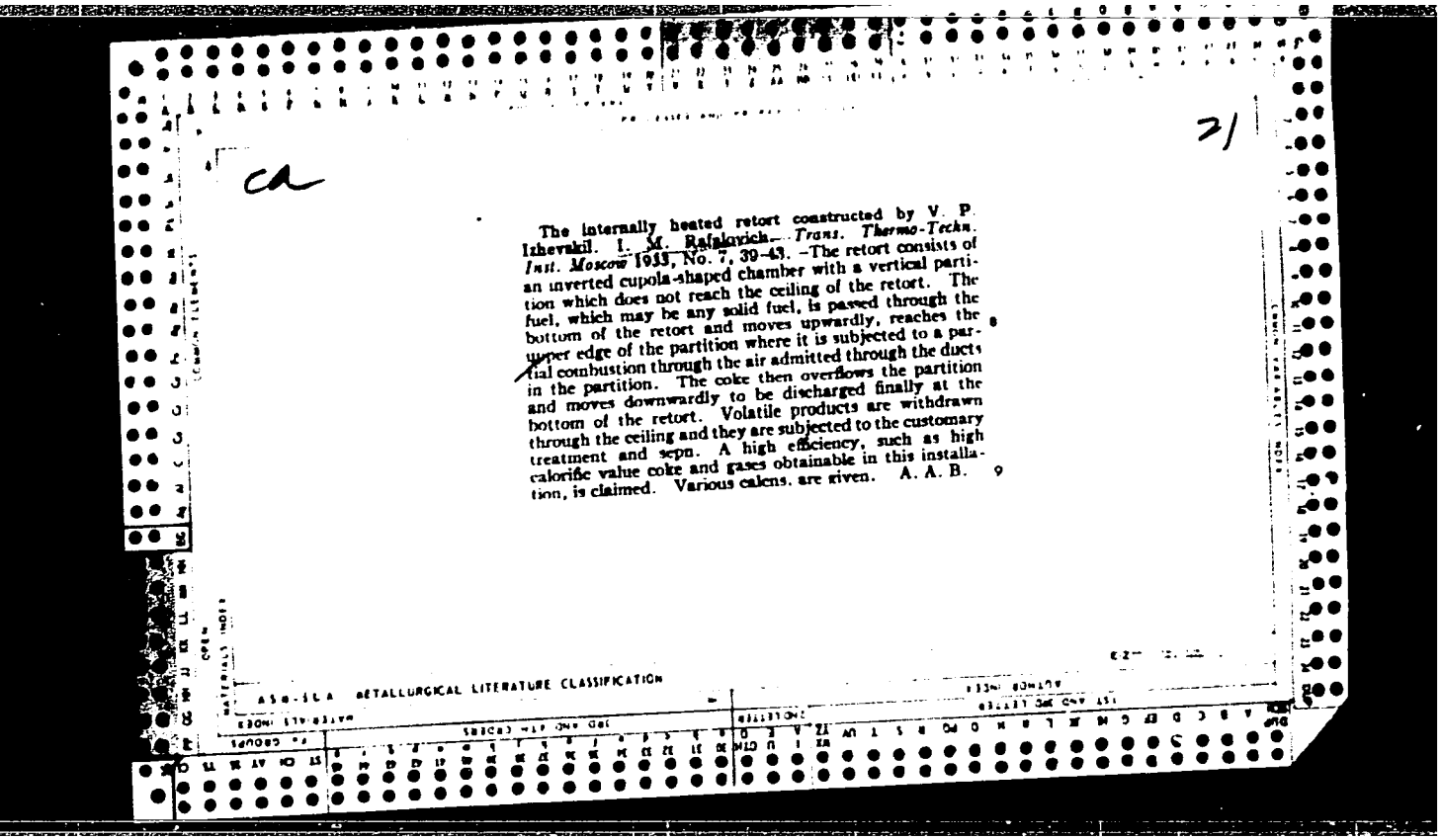


F

4738. STRENGTHENING THE ROTOR BLADES OF BOILER FLUE EXHAUST FANS. Kontorov, B. M., and Rafalovich, I. I. (Promyshlennaya Energetika (Industrial Power), 1947, No.7, 10-11).

Strengthening of the rotor blades results in longer life of boiler exhaust fans and fewer repairs, hence increased overall efficiency.

M



ca

21

The internally heated retort constructed by V. P. Izhevskil. I. M. Rafalovich. *Trans. Thermo-Techn. Inst. Moscow* 1933, No. 7, 39–43. –The retort consists of an inverted cupola-shaped chamber with a vertical partition which does not reach the ceiling of the retort. The fuel, which may be any solid fuel, is passed through the bottom of the retort and moves upwardly, reaches the upper edge of the partition where it is subjected to a partial combustion through the air admitted through the ducts in the partition. The coke then overflows the partition and moves downwardly to be discharged finally at the bottom of the retort. Volatile products are withdrawn through the ceiling and they are subjected to the customary treatment and sepn. A high efficiency, such as high calorific value coke and gases obtainable in this installation, is claimed. Various calcns. are given. A. A. B. 9

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

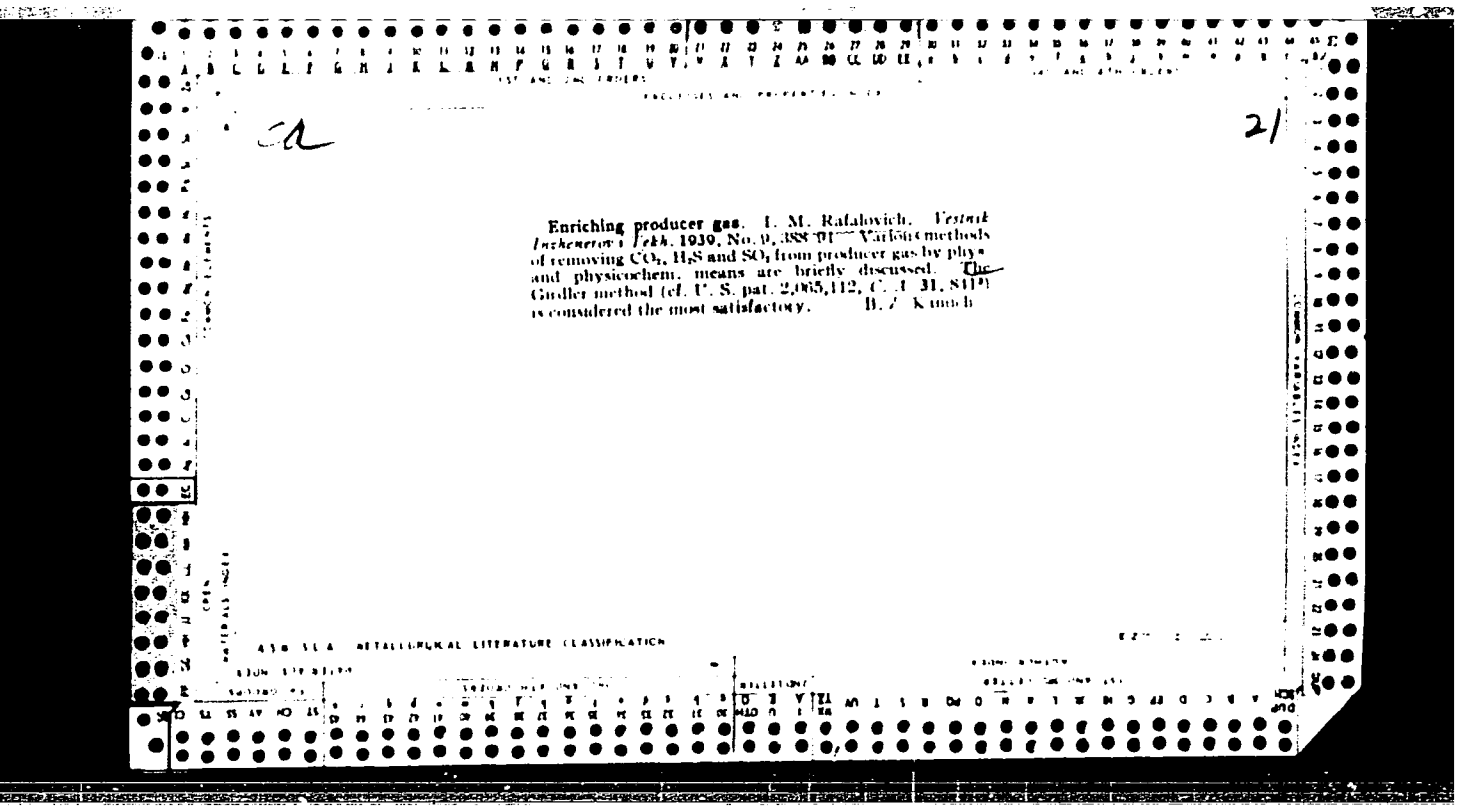
9

1ST AND 2ND ORDERS

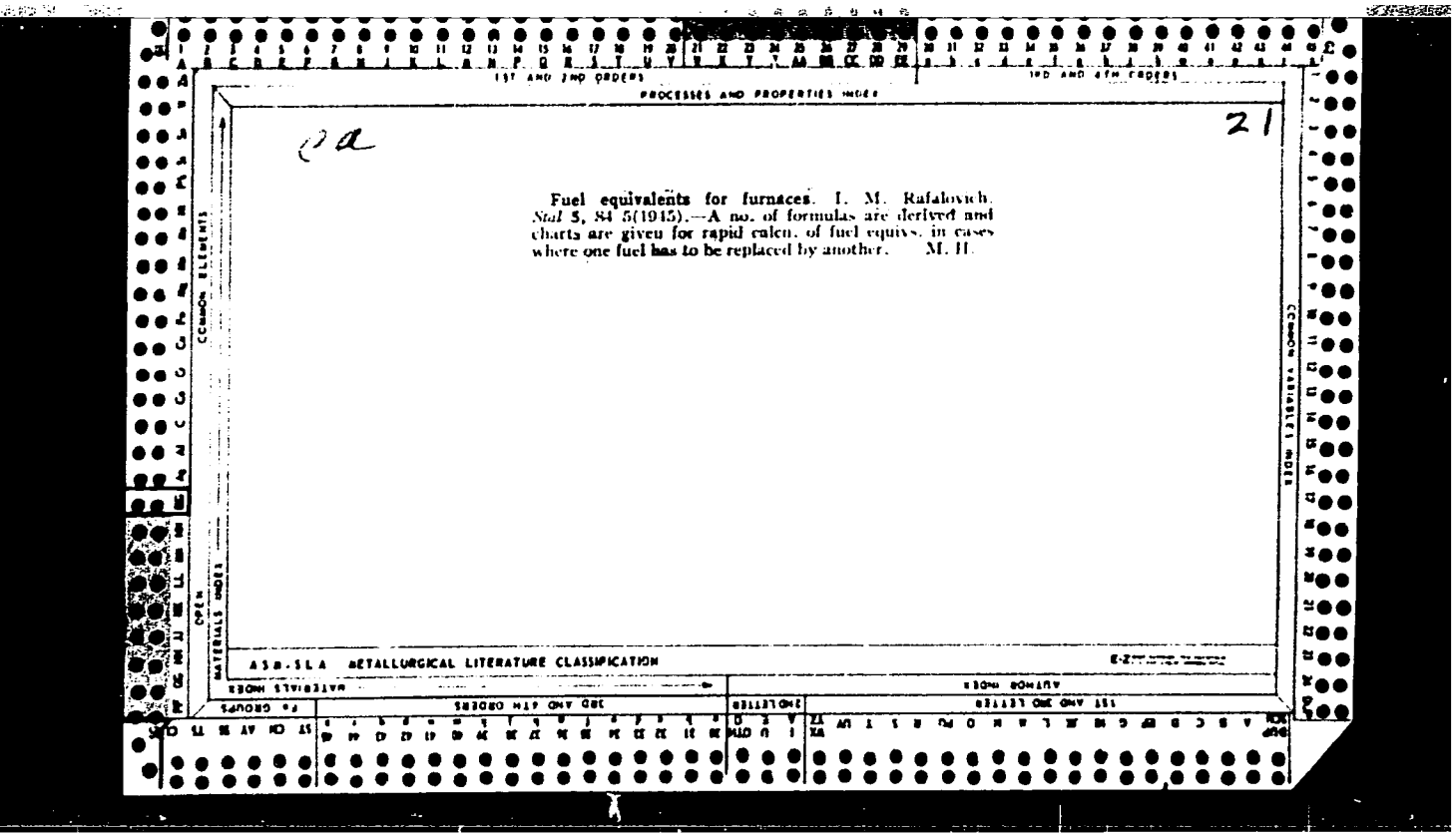
PROCESSES AND PROPERTIES INDEX

Utilization and detoxication of cupola-furnace gases
I. M. Ratalovich and V. I. Granovskii [illegible]
No. 1, 14-18(1938); Chem. Zentr. 1939, II, [illegible] The
following arrangements were tested both theoretically and
practically: (1) regeneration of the gases by the addn. of
heat from without or by their own heat in the gasification
of coke, (2) mixing of the gases with gaseous fuel of high
heating value, (3) burning of the gas with the heat de-
veloped being used for [illegible] or regeneration of
steam, (4) combustion of the gases without utilizing the
heat produced and (5) discharge of the gas into the atm.
Of these schemes, only (3) is useful under operating con-
ditions. The advantages and disadvantages of using the
heat for recuperation are discussed. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Enriching producer gas. I. M. Rafalovich. *Vestnik Inzhenerov i Tekh.* 1930, No. 9, 888-91.—Various methods of removing CO_2, H_2S and SO_2 from producer gas by phys. and physicochem. means are briefly discussed. The Gudler method (cf. U. S. pat. 2,065,112, C. A. 31, 819) is considered the most satisfactory. B. Z. Kanoh

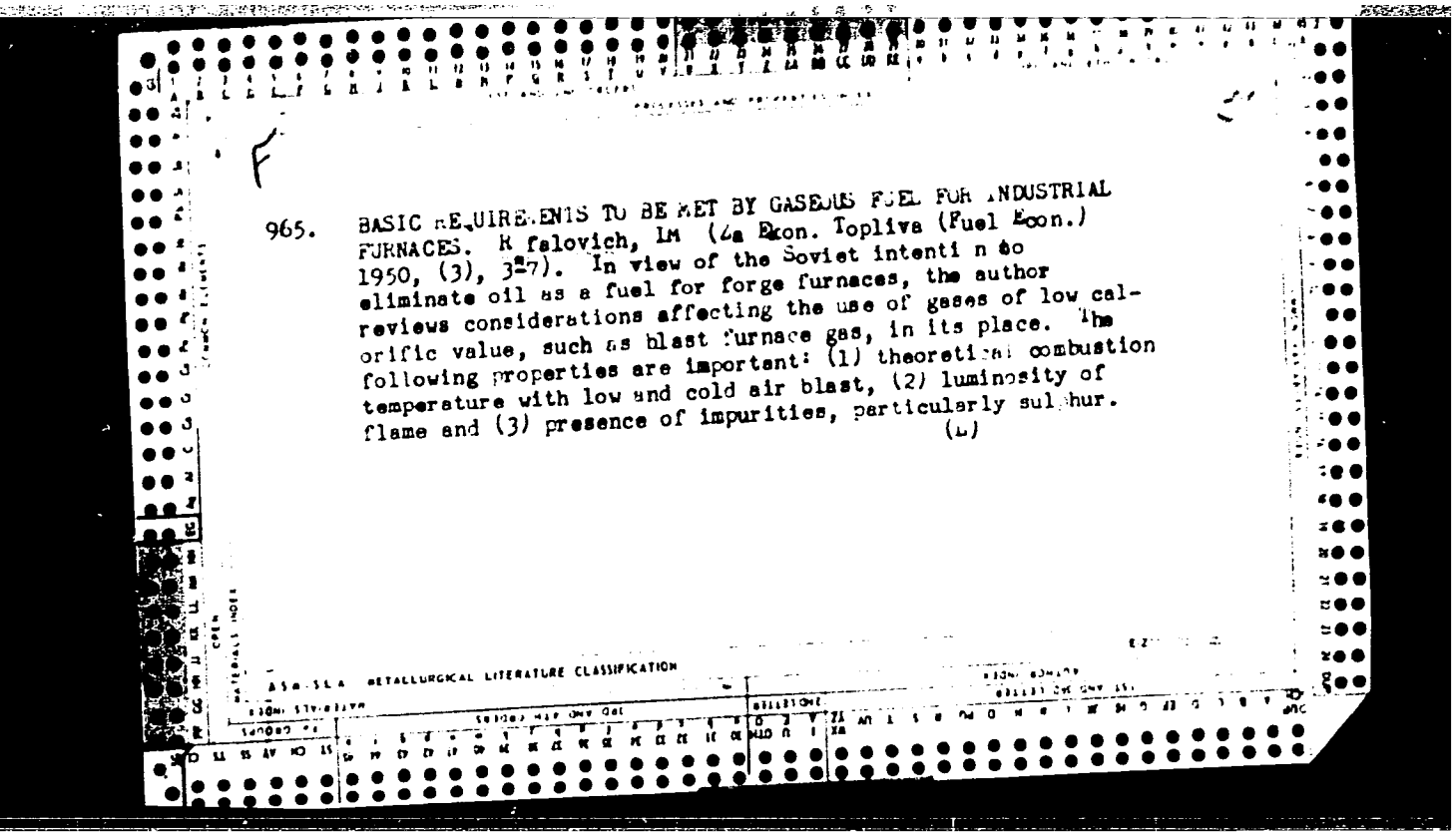


21

Fuel equivalents for furnaces. I. M. Rafalovich. *Stal* 5, 84–5(1945).—A no. of formulas are derived and charts are given for rapid calcn. of fuel equivs. in cases where one fuel has to be replaced by another. M. H.

2687. MEDIUM PRESSURE BURNERS FOR MODERN FURNACE OILS. Rafalovich, I. M., Bykhovskii, Yu. A. and Zaberezhnyi, I. I. (Za. Ekon. Topliva (Fuel Econ.), Dec. 1950, 9-12).

An illustrated description is given of modifications of burners used in copper smelting furnaces and burning 400 k.g. per hour of oil with an Engler viscosity of 5-6° at 90°C. (L).



F

965. BASIC REQUIREMENTS TO BE MET BY GASEOUS FUEL FOR INDUSTRIAL FURNACES. R falovich, IM (Za Ekon. Toplivo (Fuel Econ.) 1950, (3), 3-7). In view of the Soviet intenti n to eliminate oil as a fuel for forge furnaces, the author reviews considerations affecting the use of gases of low calorific value, such as blast furnace gas, in its place. The following properties are important: (1) theoretical combustion temperature with low and cold air blast, (2) luminosity of flame and (3) presence of impurities, particularly sulphur. (L)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

RAFALOVICH, I. M.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 519 - I

BOOK Call No.: TN677.R23

Authors: BUROVOY, I. A., BYKHOVSKIY, Yu. A., ZABEREZHNYY, I. I. and RAFALOVICH, I. M.

Full Title: EXPERIENCE WITH AUTOMATIC CONTROL OF TEMPERATURE IN REVERBERATORY COPPER-SMELTING FURNACES

Transliterated Title: Opyt avtomatizatsii teplovogo rezhima otrazhatel'nykh medeplavil'nykh pechey

PUBLISHING DATA

Originating Agency: None

Publishing House: State Scientific and Technical Publishing House of Literature on Ferrous and Nonferrous Metallurgy (Metallurgizdat)

Date: 1953 No. pp.: 328 No. of copies: 3,000

Editorial Staff

Scientific Editor: Rafalovich, I. M., Prof. Dr. of Tech. Sci.

Editor: Charikhov, L. A., Eng., Appraiser: Lisovskiy, D. I., Prof. Dr. of Tech.Sci.

PURPOSE: The book is intended for engineers and technicians dealing with controlling and measuring instruments and with automation, as well as for technologists in copper-smelting plants, scientific workers in design and research institutes, and students of metallurgical and technical schools.

TEXT DATA

Coverage: This book describes the methods of furnace investigation and preparation for automatic temperature control under various industrial conditions. It gives data on special features of the installation of automatic devices in copper-smelting shops, on the results of the analysis of individual elements of control, and on the adjusting of automatic furnaces to the most favorable temperature. It contains

Opyt avtomatizatsii teplovogo rezhima otrazhatel'nykh medeplavel'nykh pechey

AID 519 - I

information on the efficiency of the automation of reverberatory and refining copper-smelting furnaces. According to the authors, experiments in the automation of copper-smelting furnaces started in the USSR in 1949, and were completed in early 1952. Three reverberatory and two refining furnaces of the four leading Soviet Copper smelteries (see "Facilities") were the first to be controlled automatically. The book is provided with schematic drawings of furnaces and various devices, and tables and diagrams. The appendix contains instructions on automatic control of furnaces for smelters and foremen.
No. of References: 18 Russian, 1939-1952
Facilities: Engineers, technicians and workers of Kirovgrad, Krasnoural'sk, Balkhash and Pyshma Copper Smelteries; staff of the Moscow and Sverdlovsk Branches of the Instrument Design, Installation and Adjustment Organization (Proyektmontazhpribor); I. A. Strigin, Director of the State Scientific Research Institute of Nonferrous Metals (Gintsvetmet), D. M. Yukhtanov, assstant chief, and Gintsvetmet scientific workers.

RAFALOVICH, I. M.

Rafalovich, I. M., Burovoy, I. L., Bykhovskiy, Yu. A., and Zaberezhnyy I. I., "Development and Installation of Automatic Regulation of Heat Conditions in Reverberatory and Refining Furnaces," in the book Obogashcheniye i metallurgiya tsvetnykh metallov [Enrichment and Metallurgy of Non-ferrous Metals], (Collection of Scientific Works No 8), Moscow, 1953, Metallurgizdat, Pages 64-87, 15 figures, 2 tables (Gintsvetmet).

RAFALOVICH, I.M., professor, doktor.

Remarks on D.A.Diomidovskii's article "Study of the thermal performance of a refractory furnace using a flame micromodel." TSvet.met. 26 no.4:64-65 Jl-Ag '53. (MIRA 10:10)
(Metallurgical furnaces) (Diomidovskii, D.A.)

RAFALOVICH, I.M., prof., doktor

Determining the thermal properties of metallurgical materials with the aid of quantitative thermal analysis. TSvet.met. 28 no.3:30-38 My-Je '55. (MIRA 10:11)

1. Gintsvetmet.

(Metallurgy) (Thermal analysis)

GARENSKIKH, A.D.; BULATOV, V.D.; FEDCHENKO, Yu.P.; RAFALOVICH, I.M.; ZABEREZHNYY, I.I.

Industrial air heater units for reverberatory copper smelting furnaces. TSvet.met. 29 no.4:38-43 Ap '56. (MLRA 9:8)

1. Kirovgradskiy medeplavil'nyy zavod (for Garenskikh, Bulatov, Fedchenko); 2. Gintsvetmet (for Rafalovich, Zaberezhnyy).
(Copper--Metallurgy) (Smelting furnaces)

RAVALOVICH, Iosif Markovich, professor, doktor; RODE, Ye.Ya., doktor tekhnicheskikh nauk, retsenzent; MIKHAYLENKO, A.Ya., kandidat tekhnicheskikh nauk, retsenzent; GUL'DIN, I.T., redaktor; EL'KIND, L.M., redaktor izdatel'stva; ISLENT'YEVA, P.G., tekhnicheskiy redaktor

[Determining thermal and physical properties of nonferrous metals] Opredelenie teplofizicheskikh svoistv materialov tsvetnoi metallurgii. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 110 p. (MLRA 10:10)
(Nonferrous metals)

137-58-5-8816

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5 p 11 (USSR)

AUTHOR: Rafalovich, I. M.

TITLE: Determination of the Thermophysical Properties of Materials Required for Thermal Balance and Heat-transfer Calculations (Opredeleniye teplofizicheskikh svoystv materialov, neobkhodimykh dlya sostavleniya teplovogo balansa i raschetov teploperedachi)

PERIODICAL: Sb. nauch. tr. Gos. n.-i. in-t tsvetn. met. 1957, Nr 13, pp 289-304

ABSTRACT: Description of a laboratory method for the determination of thermophysical values of various materials. The laboratory setup consists of a 2.5-kw Silit furnace which houses a lightweight, fire-resistant, protective container equipped with a lid. A corundum crucible containing the material being investigated is placed into the container. The investigation method consists of the following: a constant amount of heat per unit time is imparted to the substance contained in the crucible; the temperature is measured in the center of the crucible, and inside and and outside of the protective container near its wall. The first

Card 1/3

Determination of the Thermophysical Properties (cont.)

temperature reading characterizes the process occurring within the crucible: the greater the consumption of heat the less rapidly does the temperature increase. The difference between the other two readings characterizes the flow of heat which, after passing through the walls of the protective container, heats and melts the material and heats the crucible. The system is first calibrated with the aid of two substances the heat content (HC) at various temperatures of which is well known. The time required to reach temperatures of 100°, 200°, . . 1200°C on the temperature axis is recorded during calibration as well as during the experiment itself. The average temperature drop is also computed. A calculation formula is given which permits to determine the HC and heat capacity at any temperature by utilizing the data mentioned above. After conducting one experiment for a period of 5-7 hrs, a graph showing variations of HC and of heat capacity may be constructed for the temperature interval between 0° and 1200°. As the heat consumption of the material being investigated increases in comparison with the heat consumption of the crucible and of the protective container, the accuracy of the measurements increases also; enlarging the scale of the system also improves the accuracy. In order to determine the heat conductivity and temperature diffusivity of a substance under investigation, a cylinder, the height of which is three times greater than the diameter, is made of that substance and is heated. Thermo-

137-58-5-8816

Determination of the Thermophysical Properties (cont.)

couples are installed along the axis of the cylinder and in a groove on its surface. If the material is friable, it is placed into a cylindrical metal container equipped with a cover. The procedure described is conducted at a constant rate of heating. The temperature diffusivity is determined from experimental results and by means of a diagram derived therefrom. The novel technique and accompanying apparatus are within reach of any plant laboratory making it possible to determine the HC, the heat capacity, the heat conductivity, and the temperature diffusivity of various materials in a single setup.

T G.

1. Materials--Thermal properties 2. Materials--Physical properties
3. Heat transfer--Mathematical analysis 4. Furnaces--Control systems
5. Furnaces--Equipment

Card 3/3

PHASE I BOOK EXPLOITATION SOV/4601

Koordinatsoye soveshchaniye po primeneniyu kisloroda na metallurgicheskikh zavodakh Urala. Sverdlovsk, 1956

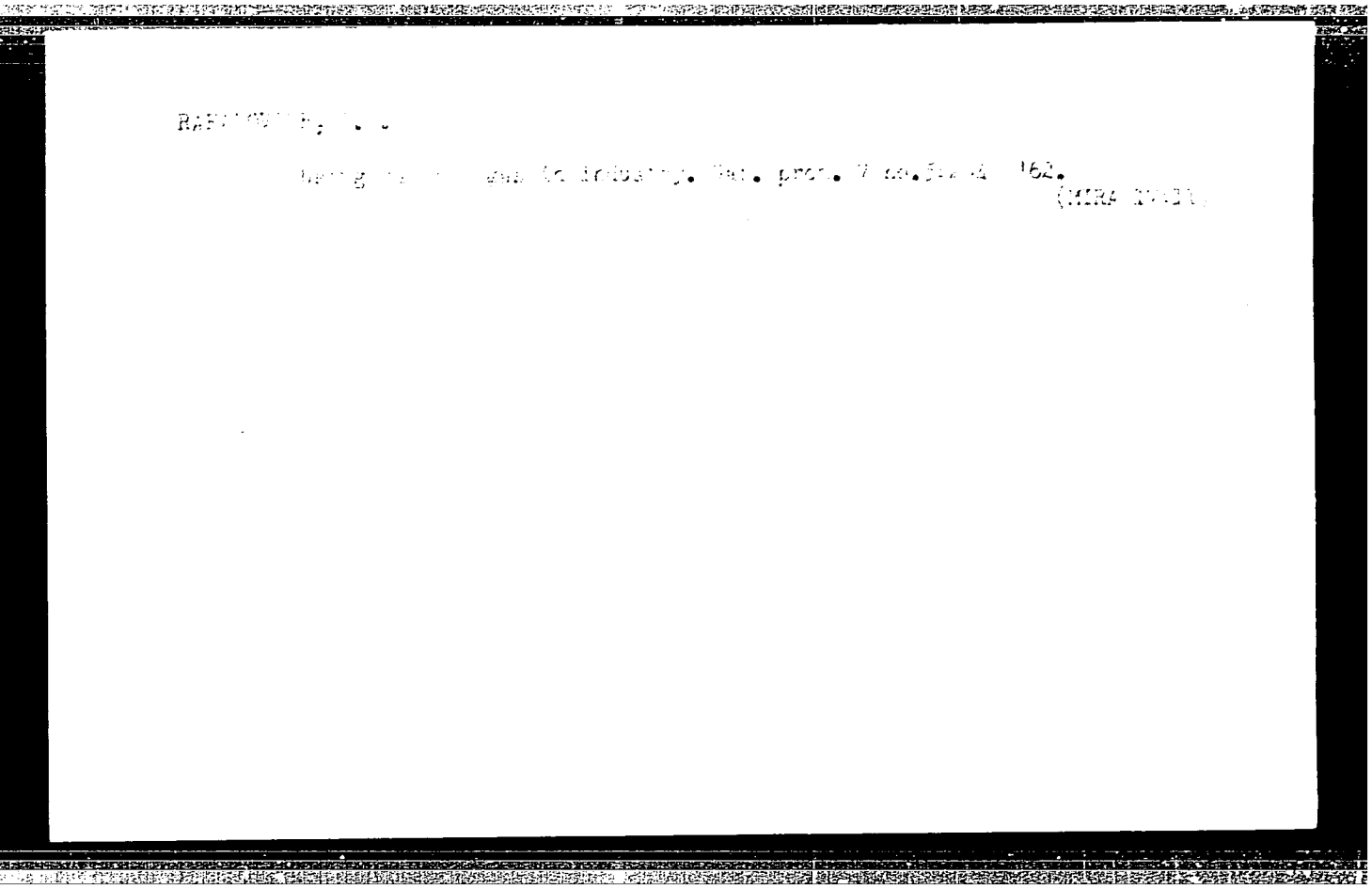
Primeneniye kisloroda na metallurgicheskikh predpriyatiyakh Urala; materialy koordinatsionnogo soveshchaniya (Use of Oxygen in Metallurgical Plants of the Urals; Materials of the Coordination Conference) Sverdlovsk, 1960. 152 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Ural'skiy filial. Institut metallurgii; Ural'skiye pravleniya nauchno-tekhnicheskikh obshchestv chernoy i tsvetnoy metallurgii.

Resp. Ed.: P.S. Kusakin, Candidate of Technical Sciences; Tech. Ed.: N.F. Seredkina.

PURPOSE: This collection of papers is intended for scientific research and technical personnel in the field of metallurgy.

COVERAGE: The use of oxygen in ferrous and nonferrous metallurgy of the Urals is discussed. Results of experimental use of oxygen in some metallurgical plants are presented. During the Conference, held December 20 and 21, 1956, the following persons (in addition to the authors) took part in the discussion: V.Ya. Miller, V.V. Mikhaylov, P.Ya. Sorokin, A.A. Perestoronin (all affiliated with the Institute of Metallurgy of the Ural Branch AS USSR), S.M. Kazachenko (Nizhne-Saldinskiy metallurgicheskiy zavod - Nizhnyaya-Salda Metallurgical Plant), M.F. Kochin (Deceased) (Ural'skiy institut chernykh metallov - Ural Institute of Ferrous Metals), M.Ye. Kislitsin (Chelyabinskiy metallurgicheskiy zavod - Chelyabinsk Metallurgical Plant), G.V. Demin (Krasnoural'skiy medeplavil'nyy zavod - Krasnoural'sk Copper Smelting Plant), V.A. Aglitskiy (Institut Unipromed' - "Unipromed'" Institute). Some of the papers are followed by references, both Soviet and non-Soviet.



RAFALOVICH, I.M., RUSSO, V.L.

Cyclone-type smelting furnaces. TSvet. met. 37 no.9:28-36 S '64.
(MIRA 18:7)

RAFALOVICH, I.M., prof., doktor tekhn. nauk; ZLOTINA, N.L., red.

[Gas heating of metallurgical furnaces; bibliography for 1948-1962] Gazovoe otoplenie metallurgicheskikh pechei; bibliograficheskii spravochnik za 1948-1962 gg. Moskva, 1963. 77 p. (MIRA 17:5)

1. Moscow. TSentral'nyy institut informatsii tsvetnoy metallurgii.

RAFALOVICH, I.M.

Necessity of external electric preheating of furnaces for the investigation of exothermic processes. TSvet. met. 36 no.11:32-34 N '63. (MIRA 17:1)

RAFALOVICH, I.M.

Regular pattern in the formation of a slag crust in metallurgical furnaces. TSvet. met. 36 no.4:44-50 Ap '63. (MIRA 16:4)

(Metallurgical furnaces—Maintenance and repair)
(Heat—Transmission)

YEVDOKIMENKO, A.I.; ZABEREZHNYY, I.I.; RAFALOVICH, I.M.; REZNIK, I.D.;
Prinimali uchastiye: SHERMAN, B.P.; KUDRIN, A.N.; GALITSKIY, L.M.;
SERPOV, V.I.; VOROB'YEV, V.A.; STEPANOV, A.S.; RODIONOVA, N.M.;
BUNTOVNIKOV, A.S.; YEVDOKIMOVA, L.Ye.

Air blast preheating for shaft furnaces. Tsvet. met. 33 no.10:12-20 O '60. (MIRA 13:10)

1. Gosudarstvennyy institut po tsvetnym metallam (for Yevdokimenko, Zaberezhnyy, Rafalovich, Reznik, Rodionova, Buntovnikov, Yevdokimova). 2. Yuzhno-Ural'skiy nikelevyy zavod (for Sherman, Kudrin, Galitskiy, Serpov, Vorob'yev, Stepanov).
(Air preheaters)
(Metallurgical furnaces--Equipment and supplies)

RAFALOVICH, Iosif Markovich, prof., doktor tekhn. nauk; BARK, S.Ye., red.; UMANSKIY, V.I., red. izd-va; KARASEV, A.I., tekhn. red.

[Natural gas as fuel for metallurgical furnaces] Prirodnyi gaz kak toplivo metallurgicheskikh pechei. 2. izd. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 324 p. (MIRA 14:12)

(Metallurgical furnaces) (Gas, Natural)

PEREL'SHTEYN, N.L., obshchiy red.; DRUZHININ, B.N., inzhener; nauchnyy red.; CHERNASHKIN, V.G., kand. tekhn. nauk, nauchnyy red.; GRABINSKIY, Ye.K., [deceased], inzhener, red.; IMMERMAN, A.G., kand. tekhn. nauk, red.; RAFALOVICH, L.A., inzh., red.; GORCHAKOV, A.V., otvetstvenyy red.; ZLATOTSVETOVA, I.I., red.; VASILEVSKIY, B.A., tekhn. red.

[Using prestressed reinforced concrete; based on data from the Second International Congress, Amsterdam, September 1955] Primenenie napriazhenno armirovannogo zhelezobetona; po materialam Vtorogo mezhdunarodnogo kongressa (g. Amsterdam, sentiabr' 1955 g.). Moskva, 1957. 322 p. (MIRA 10:12)

1. Russia (1923- U.S.S.R.) Ministerstvo stroitel'stva. Tekhnicheskoye upravleniye. 2. TSentral'noye byuro tekhnicheskoy informatsii (for Zlatotsvetova). 3. Chlen-korrespondent Akademii stroitel'stva i arkhitektury (for Perel'shteyn).
(Amsterdam--Prestressed concrete--Congresses)

CHILOVSKIY, V.G., red.; KOZKO, D.I., red.; KOPTEV, N.N., red.; KUZNETSOV, P.M., red.; MIKHAYLOV, M.V., red.; NESIS, Ye.I., red.; RAZL, Yu.V., red.; RAFALOVICH, L.A., red.; STRAKHOV, S.M., red.; STEBLYANKO, I.V., tekhn. red.

[In this book are given the answers to the questions: 1. Are there intelligent beings on other planets? 2. What significance has the Kuban-Kalaus Irrigation and Water-Supply System for Stavropol? 3. What is travertine? How is it formed and for what purposes is it used?] V etoi knige dany otvety na voprosy: 1. Est' li razumnye sushchestva na drugikh planetakh? 2. Kakoe znachenie imeet dlia Stavropolia Kuban'-Kalausskaia obvodnitel'no-orositel'naia sistema? 3. Chto takoe travertin, kak on obrazuetsia i v chem ego poleznost'? Stavropol', Stavropol'skoe knizhnoe izd-vo, 1960. 32 p. (MIRA 16:11)
(Plurality of worlds) (Kuban--Water supply)
(Travertine)

USSR/Human and Animal Physiology (Normal and Pathological). T-4
Blood Pressure. Hypertension.

Abs Jour : Ref Zhur - Biol., No 16, 1958, 74816

Author : Rafalovich, M.B.
Inst : -
Title : Clinical Observations on the Influence of Ovarian and Uterine Removal in Women on the Appearance in Them of High Blood Pressure.

Orig Pub : Probl. endokrinol. i gormonoterapii, 1957, 3, No 1, 85-87

Abstract : No abstract.

Card 1/1

RAFALOVICH, M.S.

Combination of hypertension and cancer. Sov.med. 22 no.11:41-43 N '58 (MIRA 11:11)

1. Iz kafedry propedevtiki vnutrennikh bolezney Stavropol'skogo meditsinskogo instituta (dir. - prof. V.G. Budylin).
(NEOPLASMS, compl.
hypertension (Rus))
(HYPERTENSION, compl.
cancer (Rus))

RAFALOVICH, M. B., dotsent (Stavropol')

Amount of cholesterol and lecithin and their correlation in patients with primary arterial hypotension. Klin. med. no.6:116-119 '61. (MIRA 14:12)

1. Iz kafedry propedevtiki vnutrennikh bolezney Stavropol'skogo me meditsinskogo instituta (dir. - prof. V. G. Budylin)

(HYPOTENSION) (CHOLESTEROL) (LECITHIN)

RAFALOVICH, M.B., dotsent

Changes in arterial pressure in various forms of diabetes mellitus.
Sov. med. 25 no.11:99-102 N '61. (MIRA 15:5)

1. Iz kafedry propedevtiki vnutrennikh bolezney Stavropol'skogo meditsinskogo institua (dir. - prof. V.G.Budylin).
(DIABETES) (BLOOD PRESSURE)

RAFALOVICH, M.B.; GOLOVCHENKO, G.T.

Peptic ulcer of the stomach and the duodenum in many members of the same family. Uch. zap. Stavr. gos. med. inst. 12:420 '63. (MIRA 17:9)

1. Kafedra vnutrennikh bolezney stomatologicheskogo fakul'teta (zav. dotsent M.B. Rafalovich) Stavropol'skogo gosudarstvennogo meditsinskogo instituta.

RAFALOVICH, M.B.; KUTILOVA, V.N.

Lipid content in the blood of persons of different age groups. Uch. zap. Stavr. gos. med. inst. 12:421-422 '63. (MIRA 17:9)

1. Kabinet geriatrii (nauchnyy rukovoditel' dotsent M.B. Rafalovich) Stavropol'skogo gosudarstvennogo meditsinskogo instituta.

RAFALOVICH, M. B., dotsent

Average arterial pressure in primary arterial hypotonia. Vrach. delo no.7:135-136 Jl '62. (MIRA 15:7)

1. Kafedra propedevtiki vnutrennikh bolezney Stavropol'skogo meditsinskogo instituta.

(BLOOD PRESSURE) (HYPOTENSION)

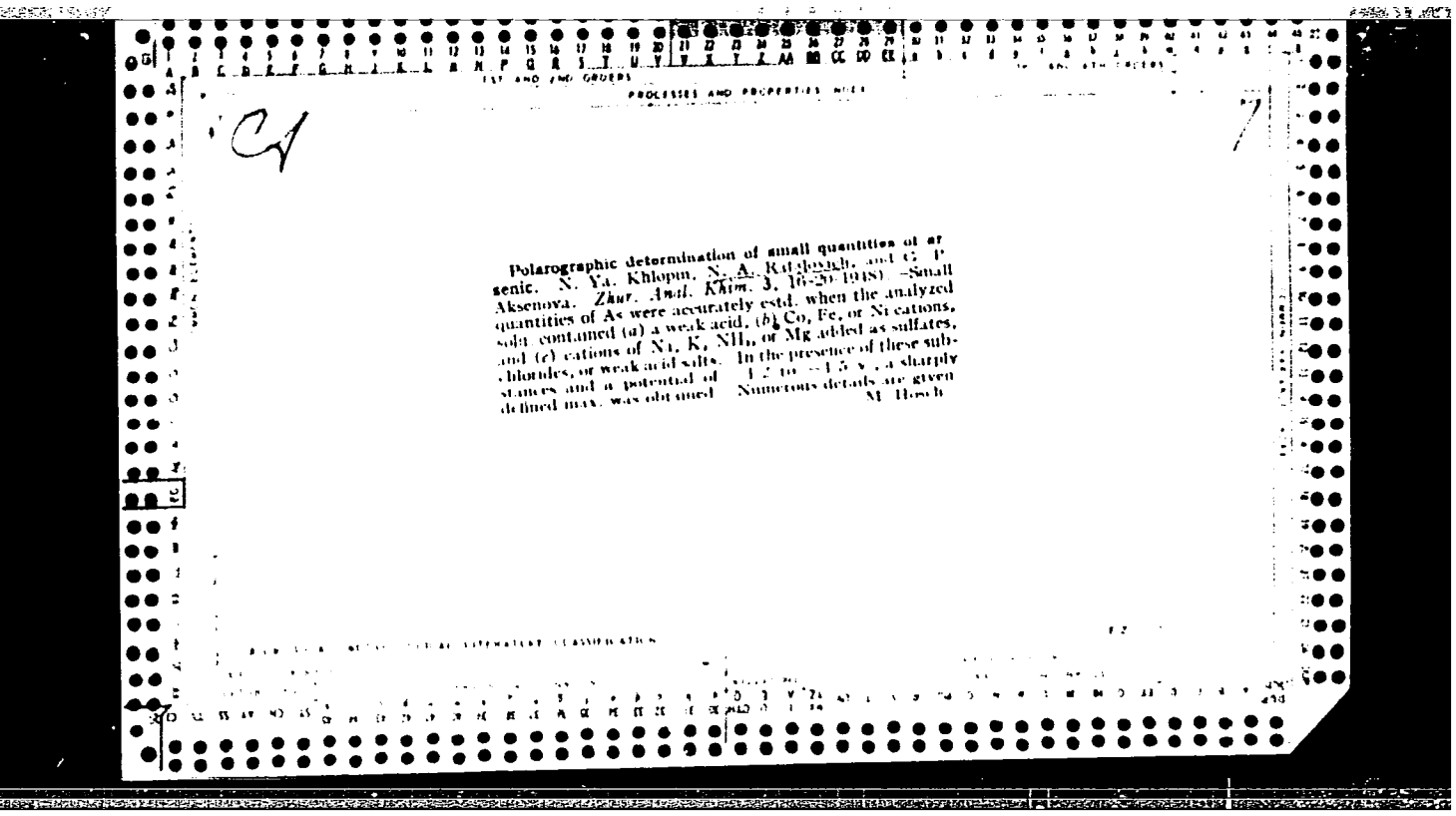
RAFALOVICH, M.B., dotsent; KHARCHENKO, L.I., red.; STEBLYANKO, T.V., tekhn. red.

[Therapeutic nutrition] Lechebnoe pitanie. 2., dop. izd. Stavropol', Stavropol'skoe knizhnoe izd-vo, 1962. 95 p. (MIRA 15:6)

(DIET IN DISEASE)

BOLDIN, K.M. (Yaroslavl'); DROZDOVA, Z.S.; LEVIN, R.I.; VAYSMAN, L.A. (Kuybyshev-obl.); PODOSINOVSKIY, V.V.(Kazan'); SAYFULLINA, Kh.M. (Kazan'); EUSYGIN, N.V.(Kazan'); RAZUMOVSKIY, Yu.K.(Leninogrosk); GEL'FER, G.A., dotsent (Gor'kiy); MAMISH, M.G.(Kazan'); RAFALOVICH, M.B., dotsent; MEL'NICHUK, S.P., kand.med.nauk; KRAPIVIN, B.V.; STAROVEROV, A.T. (Saratov); SURIN, V.M.; POROSENKOV, V.S.(Romodanovo, Mordovskoy ASSR); ANDROSOV, M.D.(Moskva); ZARIPOV, Z.A.(Urussu, Tatarskoy ASSR); MURAV'YEV, M.F.(Izhevsk); KUZ'MIN, V.I.(Batyrevo, Chuvashskoy ASSR); SITDYKOV, E.N.(Kazan'); YUDIN, Ya.B.(Novokuznetsk)

Short reports. Kaz.med.zhur. no.4:81-91 Jl-Ag '62. (MIRA 15:8)
(MEDICINE--ABSTRACTS)



Polarographic determination of small quantities of arsenic. N. Ya. Khlopin, N. A. Ratchovsh, and G. P. Aksenova. *Zhur. Anal. Khim.* 3, 16-20 (1948).—Small quantities of As were accurately estd. when the analyzed soln. contained (*a*) a weak acid, (*b*) Co, Fe, or Ni cations, and (*c*) cations of Na, K, NH_4, or Mg added as sulfates, chlorides, or weak acid salts. In the presence of these substances and a potential of −1.2 to −1.5 v., a sharply defined max. was obtained. Numerous details are given.
M. Hirsch

RAFALOVICH, N. A.

Khlopin, N. Ia., Rafalovich, N. A., Aksenova, G. P., "Maximums on volt-ampere graph curves for arsenic." (p. 1008)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1948, Volume 18, No. 6

RAFALOVICH, N. A.

"Maximums on the Volt-Ampere Graph Curves for Arsenic," Zhur. Obshch. Khim., 18, No. 6, 1948. Mbr., Molotov Oblast Sanitation-Hygiene Lab., -c1948-. Molotov State Pharmaceutical Inst., -c1948-.

[illegible], [illegible]

[illegible], [illegible], [illegible] and Ak[illegible]nov, G. [illegible], [illegible] [illegible]mum on the volt-a[illegible] [illegible] [illegible] [illegible] [illegible]nts [illegible] the [illegible] [illegible] the formation of the [illegible] [illegible] [illegible] [illegible]ographic curves. [illegible]

It has been established that the apparent [illegible] of the [illegible] in the cases [illegible] is present only at a potential more negative than -1. [illegible]. The [illegible]ss of the [illegible] on the volt-a[illegible] curve of arsenic is accompanied by the liberation of [illegible] hydrogen. Moreover, a difference in intensity and constancy of the [illegible] of the electrolyte and the surface of the mercury cathode is dependent upon the [illegible] of the falling of the drop.

[illegible] State [illegible]ac[illegible] Inst. and the Regional Sanitary-Health [illegible].

[illegible], [illegible]

SO: Journal of [illegible] Chemistry (USSR) 19 ([illegible]) No. [illegible] ([illegible])

7

Polarographic determination of the phosphate ion. N. Ya. Khlopin, N. A. Rafalovich, and K. P. Privalova. *Zavodskaya Lab.* 15, 1305-7 (1940). Since the PO_4 ion is not reduced at the dropping-Hg electrode, indirect methods are necessary. The PO_4 ion is detd. by polarography of excess MoO_4^{--} after pptn. of NH_4 phosphomolybdate or by polarography of excess Bi after pptn. by $Bi(NO_3)_3$ in the presence of HNO_3. The former method gives more reliable results. G. M. Kosolapoff

RAFALOVICH, N. A.

25851 RAFALOVICH, N. A., KHLOPI , N. YA., I PRIVALOVA, K? P.

Polyarograficheskiy metod opredelniya fosfat-iona. Zavodskaya laboratoriya, 1949, No. 77, s. 1305-07

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

S/123/59/000/006/005/025
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 6, p. 59, # 20500

AUTHORS: Mashlin, A. Ya., Rafalovich, P. M.

TITLE: The Development in Production of Centrifugal Compressor Engines and Turbines in the Nevskiy mashinostroitel'nyy zavod imeni V. I. Lenina (Nevskiy Machine Works imeni V. I. Lenin)

PERIODICAL: Tr. Nevsk. mashinostroit. z-da, 1958, No. 3, pp. 5-23

TEXT: The production of compressors is concentrated in the work in an individual shop subdivided into several specialized sections of: housing, rotors, reductors, assembly, and control-testing. The shop is equipped with 7 vertical lathes, balancing machines, boring machines, and others, which are equipped with various accessories and special tools. The turbine production was developed simultaneously. As a result of the unification performed, the total series of steam turbines of 4,000 - 6,000-kw power (condensation, thermofication, driving turbines, and turbines with industrial bleeding-off steam) have up to 70% of the common units. A separate turbine shop was organized with sections of machining

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The Development in Production of Centrifugal Compressor Engines and Turbines in the Nevskiy mashinostroitel'nyy zavod imeni V. I. Lenina (Nevskiy Machine Works imeni V. I. Lenin)

and assembling the control units and steam distribution units, condenser production, and others; these sections are equipped with profiling lathes for discs, balancing machines for rotors, equipment for heat testing the shafts, stands for checking and testing turbines, and others. The introduction of advanced technology reduced the labor-consumption by 50 - 60%. The same shop produces gas turbines with blades of fire-proof steels. The specialized shops and sections are organized according to the technologic principle. The following new processes were introduced: finishing pass with broad cutting tools for processing the planes of horizontal joints, boring according to radial and axial braces, application of mechanized boring bars for boring closed structures. Guides, special patterns, and copying units at the machines for producing blade diffusers and diaphragms of compressor engines, special accessories for welding the diaphragms of high-pressure turbines, and the molding of diaphragms by models with metallic ribs are widely applied. The wheels and rotors are mounted on a stand in the vertical position; when wheels are fitted on, the end of the shaft is cooled down in liquid nitrogen. There are 22 figures. B. I. M.
Translator's note: This is the full translation of the original Russian abstract.
Card 2/2

RAFALOVICH, P. M. and B.V.SHOSTAKOVICH

Tekhnologiia proizvodstva turbomashin. Moskva, Mashgiz, 1950. 162 p. illus.

Bibliography: p. (161)

Technology of turbine production.

DLC: TJ870.S48

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953

RAFALOVICH, S., inzhener-podpolkovnik; SMOTKIN, Z., inzhener-mayor; GOVOROV, G., inzh.

Without complaints. Av. i kosm. 47 no.7:81-84 Jl '65.
(MIRA 18:6)

TSIMERINOV, A. A; RAFALOVICH, S. M.

Vrachebnoye delo, Moskva, no.2:52 Mar-Apr 1952 (CLML 22:2)

1. Khar'kov Skin-Venereological Institute.

USSR / Microbiology - Microorganisms Photogenic to Humans and Animals. F-4

Abs Jour: Ref Zhur-Biol., No 9, 1958, 38537

Author : Pimerinov, A. A., Beznos, T. I., Rafalovich, S. M.
Inst : Not given.
Title : Further Study of Controlled Variability in Dermatophytes.

Orig Pub: V sb.: Sovrem. vopr. dermatol. Kiev, Gosmedizdat USSR, 1957, 148-153.

Abstract: A report on controlled variability of Microsporum ferrugineum and Trichophyton violaceum when cultivated on culture filtrates of M. lanosum, and on media containing its decomposition products.

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F

USSR/Microbiology - General Microbiology. Variability and Heredity.

Abs Jour : Ref Zhur Biol., No 22, 1958, 99312

products of M. lanosum, a variant was obtained which was able to form multicellular spindles, similar to the spindles of M. lanosum, along with another variant with mycelium of bamboo-shaped structure, as in M. lanosum. However, these characteristics were lost in subsequent reseedings. 3 microphotographs. -- Ya.I. Rautenshteyn

Card 2/2

BEZNOS, T.I.; RAFALOVICH, S.M.; BOGUSLAVSKAYA, A.V.; DOLGIKH, A.I.; KALMYKOVA, M.V. (Khar'kov)

Role of fungi in complications from treatment with antibiotics. Vrach. delo no.8:76-78 Ag '60. (MIRA 13:9)

1. Ukrainskiy nauchno-issledovatel'skiy kozhno-venerologicheskiy institut, Detskaya bol'nitsa Yuzhnoy zheleznoy dorogi i Chetvertyy kozhno-venerologicheskiy dispanser.
(FUNGI, PATHOGENIC) (ANTIBIOTICS)

RAFALOVICH, S. M.

Nov 53

USSR/ Medicine - Modification of Microorganisms

"The Problem of the Directed Modificationof Dermatophytes," A. A. Tsimerinov, T. I. Beznos, S. M. Rafalovich, Ukrainian Sci-Res Dermato-Venerological Inst

Zhur Mikro, Epid. i Immun, No 11, pp 27-30

Breeding of Microsporum Ferrugineum (I) together with Microsporum lanosum (II) results in a stable variant of I which has some of the cultural and morphilogival characteristics of II.

271T37

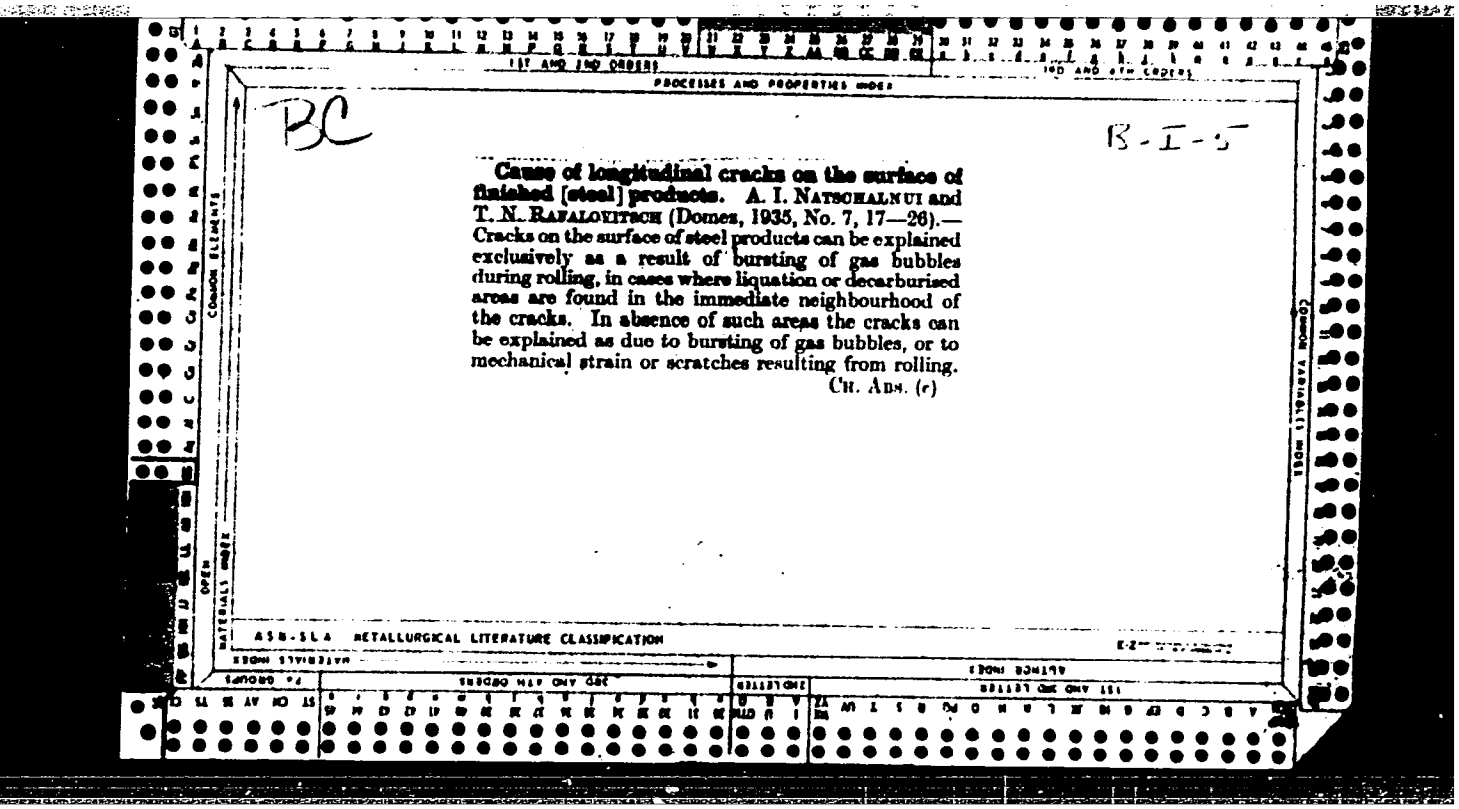
RAVLOVICH, S. N.

"Atrophy of the Optic Nerve due to Poisoning by Castor Plants," Vest. Oftalmol., 28, No. 3, 1949. Cand. Medical Sci. Mbr., Eye Dept., Road Polyclinic, Stalin Railroad, Dnepropetrovsk, -c1949-.

RAFALOVICH, Ts.N.

Interrelation of elements of the fine crystal structure and the plasticity of steel at high temperatures. Izv.vys.ucheb. zav.; chern.met. no.5:81-84 '60. (MIRA 13:6)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Steel--Metallography) (Metals at high temperature)

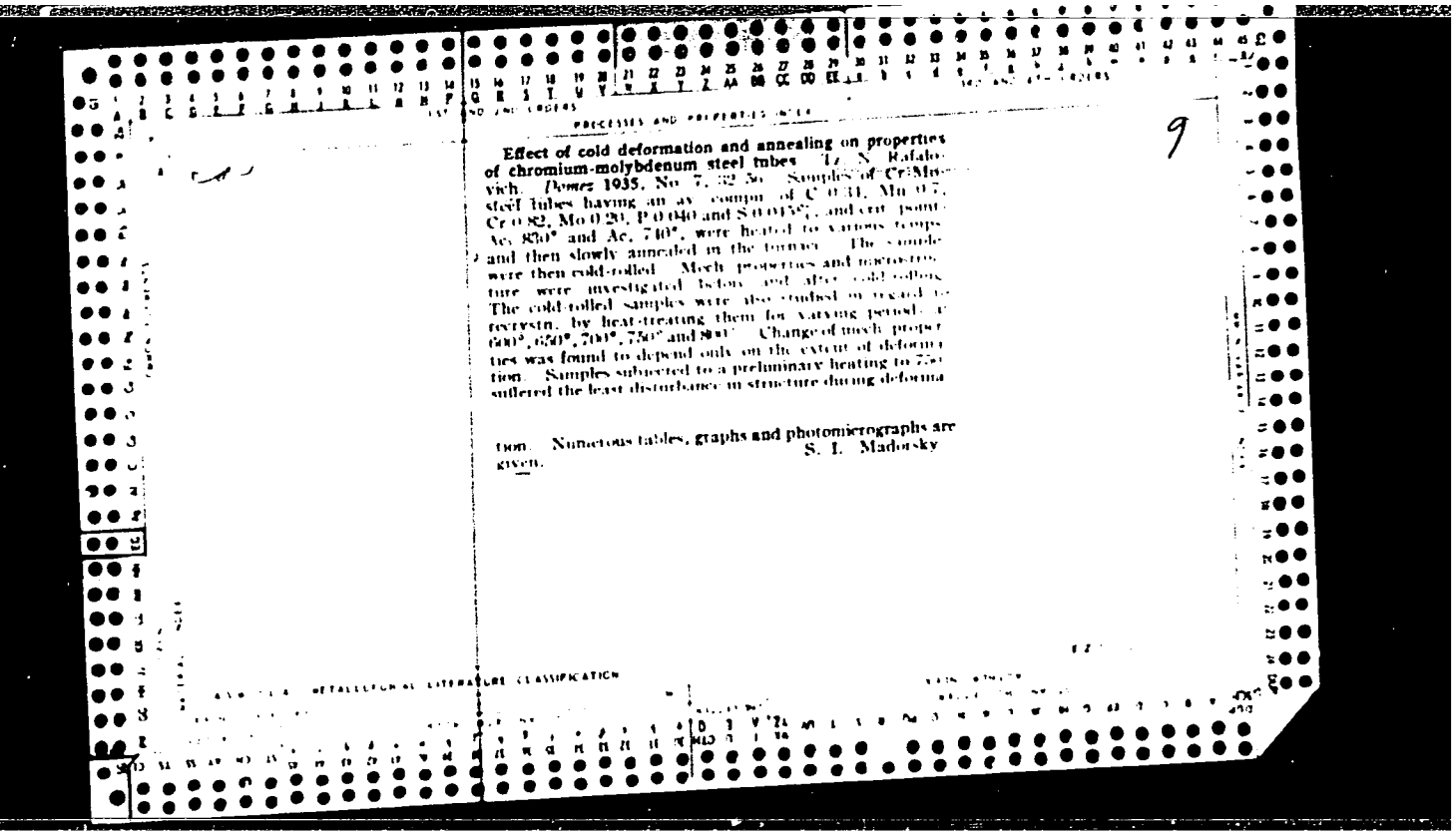


BC

B-I-5

Cause of longitudinal cracks on the surface of finished [steel] products. A. I. NATSCHALNUI and T. N. RAFALOVITSCH (Domez, 1935, No. 7, 17—26).—Cracks on the surface of steel products can be explained exclusively as a result of bursting of gas bubbles during rolling, in cases where liquation or decarburised areas are found in the immediate neighbourhood of the cracks. In absence of such areas the cracks can be explained as due to bursting of gas bubbles, or to mechanical strain or scratches resulting from rolling.

CH. ABS. (*r*)



PROCESSES AND PROPERTIES INDEX

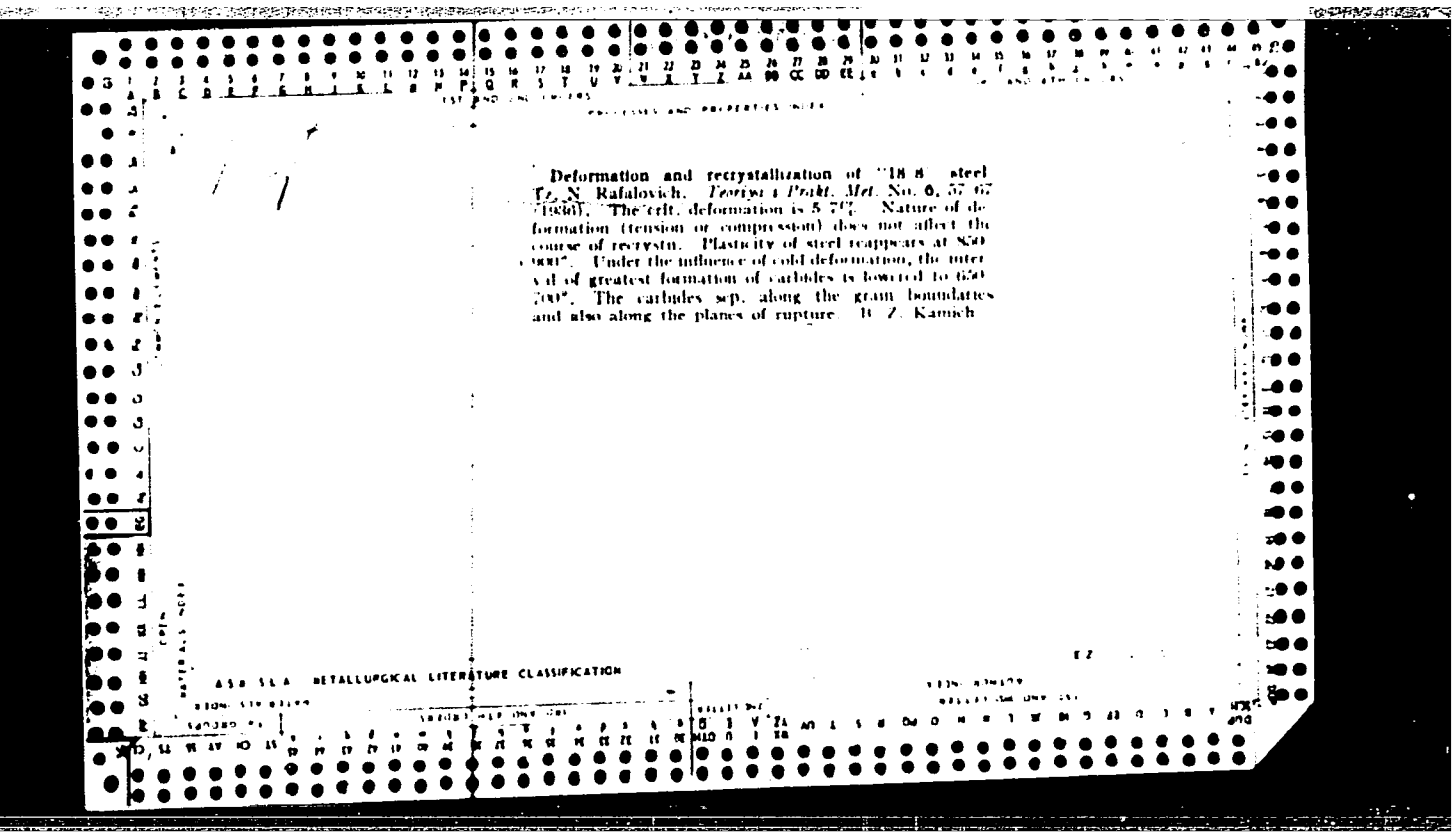
9

Effect of cold deformation and annealing on properties of chromium-molybdenum steel tubes Iz. N. Rafalo-vich. *Tsvetmet* 1935, No. 7, 32 pp. Samples of Cr-Mo steel tubes having an av. compn. of C 0.31, Mn 0.7, Cr 0.82, Mo 0.20, P 0.040 and S 0.015%, and cut from Ac. 830° and Ac. 740°, were heated to various temps. and then slowly annealed in the furnace. The samples were then cold-rolled. Mech. properties and microstructure were investigated before and after cold-rolling. The cold-rolled samples were also studied in regard to recrystn. by heat-treating them for varying periods at 600°, 650°, 700°, 750° and 800°. Change of mech. properties was found to depend only on the extent of deformation. Samples subjected to a preliminary heating to 750° suffered the least disturbance in structure during deformation. Numerous tables, graphs and photomicrographs are given.

S. L. Madorsky

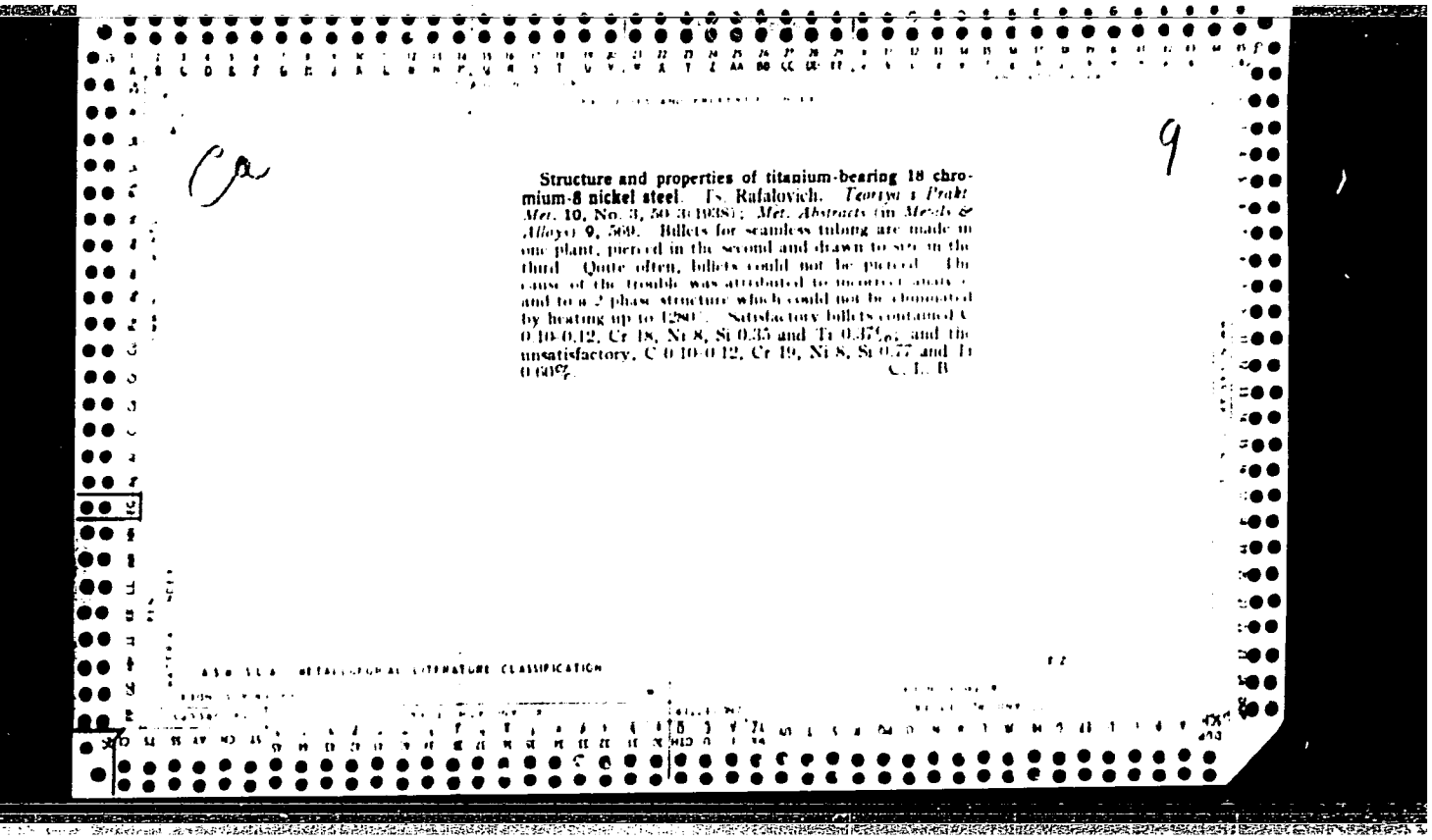
Experiments on electrothermal treatment of thin walled tubes Is. N. Rafalovich and F. N. Vdovin *Teoriya i Prakt. Met.* 1936, No. 9, 64-72.—The Cr-Mo tubes were treated by passing an elec. current through them. Best mech. properties and microstructure are obtained by heating for 1 min. at 900-950°. B. Z. Kamich

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

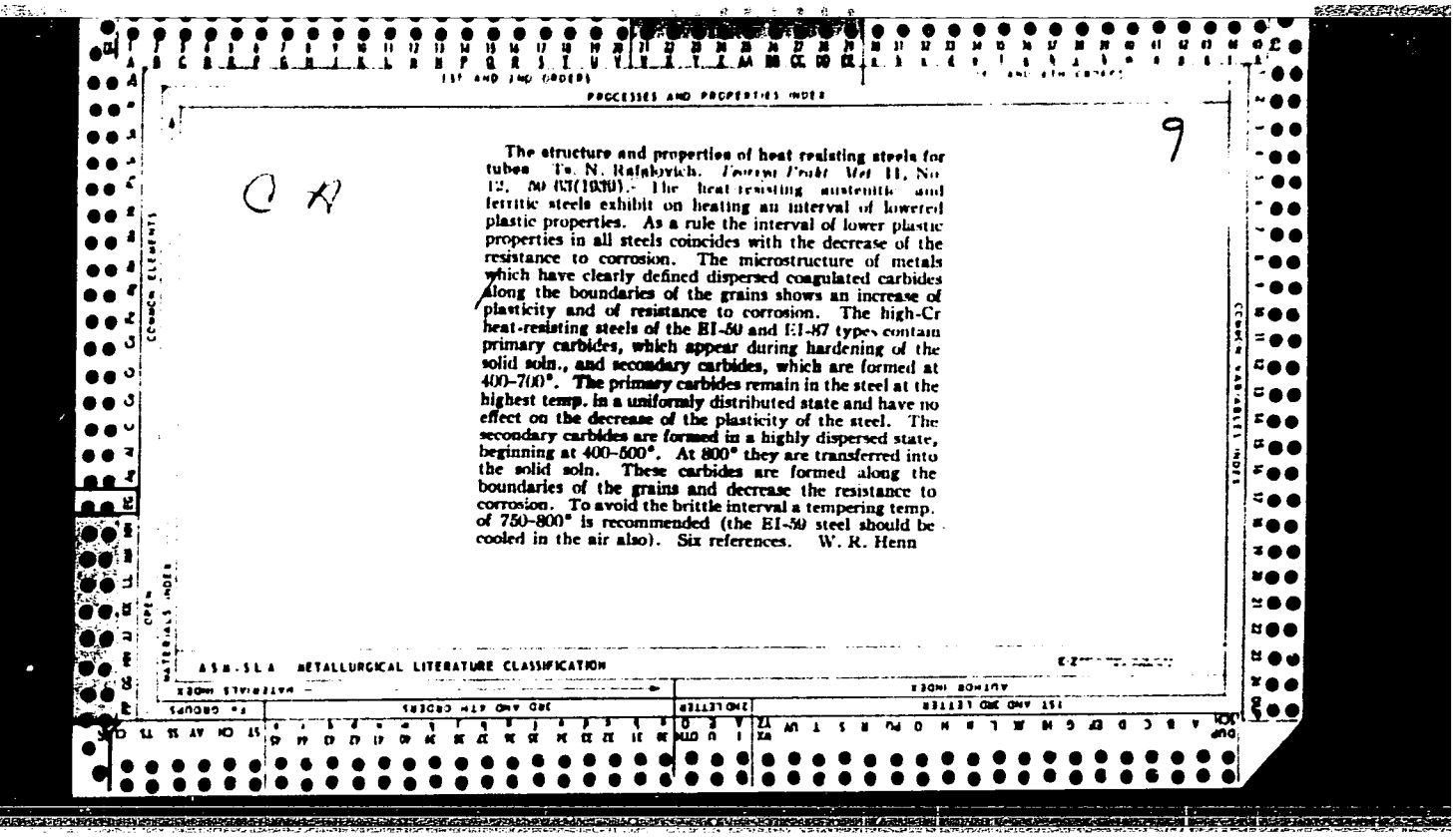


Deformation and recrystallization of "18 8 steel T. N. Rafalovich. *Teoriya i Prakt. Met.* No. 6, 57-67 (1936). The crit. deformation is 5-7%. Nature of deformation (tension or compression) does not affect the course of recrystn. Plasticity of steel reappears at 850-900°. Under the influence of cold deformation, the interval of greatest formation of carbides is lowered to 650-700°. The carbides sep. along the grain boundaries and also along the planes of rupture. B. Z. Kamich

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION



Structure and properties of titanium-bearing 18 chromium-8 nickel steel. Ts. Rafalovich. *Tsentyn i Prakt. Met.* 10, No. 3, 50-3 (1938); *Met. Abstracts* (in *Metals & Alloys*) 9, 569. Billets for seamless tubing are made in one plant, pierced in the second and drawn to size in the third. Quite often, billets could not be pierced. The cause of the trouble was attributed to incorrect heat-treatment and to a 2 phase structure which could not be eliminated by heating up to 1280°. Satisfactory billets contained C 0.10-0.12, Cr 18, Ni 8, Si 0.35 and Ti 0.47%; and the unsatisfactory, C 0.10-0.12, Cr 19, Ni 8, Si 0.77 and Ti 0.60%. C. L. B

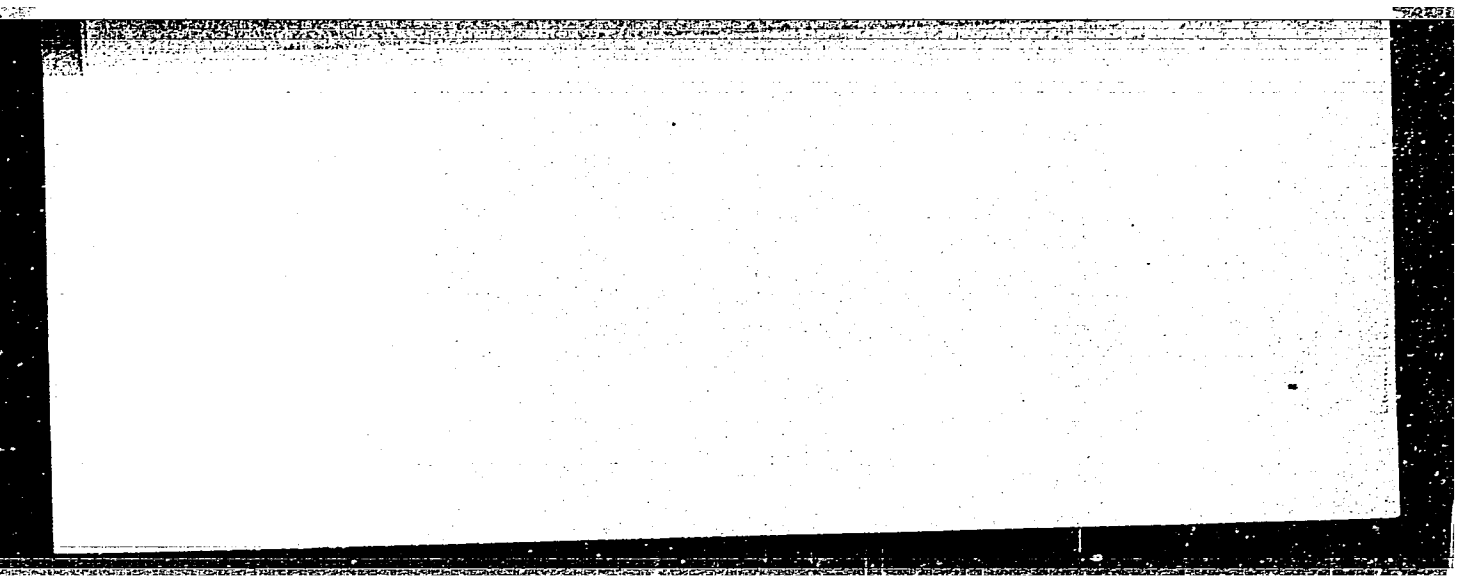


PROCESSES AND PROPERTIES INDEX

9

The structure and properties of heat resisting steels for tubes. Ya. N. Rafalovich. *Tsvetn. Metall. Met.* 11, No. 12, 50-63(1939).- The heat resisting austenitic and ferritic steels exhibit on heating an interval of lowered plastic properties. As a rule the interval of lower plastic properties in all steels coincides with the decrease of the resistance to corrosion. The microstructure of metals which have clearly defined dispersed coagulated carbides along the boundaries of the grains shows an increase of plasticity and of resistance to corrosion. The high-Cr heat-resisting steels of the EI-50 and EI-87 types contain primary carbides, which appear during hardening of the solid soln., and secondary carbides, which are formed at 400–700°. The primary carbides remain in the steel at the highest temp. in a uniformly distributed state and have no effect on the decrease of the plasticity of the steel. The secondary carbides are formed in a highly dispersed state, beginning at 400–500°. At 800° they are transferred into the solid soln. These carbides are formed along the boundaries of the grains and decrease the resistance to corrosion. To avoid the brittle interval a tempering temp. of 750–800° is recommended (the EI-50 steel should be cooled in the air also). Six references. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001344010010-7"

Category : USSR/Solid State Physics - Structure of Deformable Materials E-8

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 5752

Author : Refalovich, Ts.K.
Inst : Dnepropetrovsk Metallurgical Institute, USSR.
Title : Recrystallization Parameters in Induction Heating

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 2, 259-269

Abstract : Recrystallization parameters were studied microscopically in MS-10 low carbon steel. The deformation was performed by cold rolling hollow cylindrical specimens in several passages without intermediate annealing. The total deformation was 52%. The specimens were heated in a seltpeter bath and in an induction furnace. The average speed of heating in the seltpeter was 40°/minute and in induction heating 500°/second. The heating curves of the specimens were recorded with an oscillograph. At the higher heating speed, the recrystallization parameters at all temperatures exceed considerably the same parameters at the relatively low heating speeds. The maximum values of these parameters in

Card : 1/2

RAFAL'OVICH, Ts.N.

FIZIKA METALLOV I METALLOVEDENIE

Physics of Metals and Metallography

Vol 2, Nr 2, 1956

Signed for print April 29, 1956

Recrystallization parameters in the case of induction heating. Much attention is being paid to the mechanism and kinetics of phase transformations during high speed heating. However, investigation of the kinetics of recrystallization processes as a function of the speed of heating, particularly for induction heating, has so far attracted little attention. In this paper results are described of experimental determination of the recrystallization parameters (speed of nuclei formation and speed of growth) of cold worked low carbon steel during induction heating and heating at relatively low speeds. The obtained data were analysed for the purpose of detecting the peculiarities of the kinetics of recrystallization during high speed induction heating. The tested steel had the following composition: 0.15% C; 0.45% Mn; 0.51% Si; 0.03% S;

RECRYSTALLIZATION PARAMETERS IN THE CASE OF ...

0.03% P. At high heating speeds by means of high frequency currents the absolute values of the speed of deformation of crystallization centres and of their growth exceeds at all temperatures the respective values obtained during small heating speeds; the highest values are attained at the initial instant of the holding time. The decrease of the parameters with increasing holding times shows a hyperbolic dependence, whilst in the case of slow heating it is proportional to the holding time. The activation energy of the recrystallization process, calculated from the values of the speeds of nuclei formation and growth, can be expressed for high speed inductional heating by the value 15000 - 20000 cal/g at. and for low speed heating by 60000 to 70000 cal/g at. It can be assumed that, in the case of high speed heating, energy conditions are created in which "internal resources" form which reduce the magnitude of the additional external energy required for overcoming the energy barriers and producing centres of recrystallization and growth. In the case of high speed heating by high frequency currents these resources may increase on account of increasing energy levels of the atoms of the inclusions in the process of multiple remagnetization, producing changes in the domain orientations.

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RECRYSTALLIZATION PARAMETERS IN THE CASE OF...

Instantaneous formation of a large number of recrystallization centres during elimination of superfluous vacancies occurs at the very first instant of the heating and this determines the kinetics of the recrystallization process. Then the process attenuates rapidly since with a considerable decrease of the concentration of the superfluous vacancies the coefficient of self-diffusion decreases sharply.

By Ts. N. Rafalovich.

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Rafalovich, Ts. N.

Recrystallization structure of cold-drawn steel. Ts. N. Rafalovich (Met. Inst., Dnepropetrovsk). *Fiz. Metal. i Metalloved., Akad. Nauk. S.S.S.R.*, 3, 325–31(1956).—Pipes made of plain C (0.10%) steel annealed at 650° and of 18 Cr-8 Ni alloys water-quenched from 1050° were cold-worked and their structure detd. by x-rays and pole figures in the cold-drawn state, after conventional heating to recrystn. temp. and after heating it at 500°/sec. A correspondence of the orientation between the new grains and the original was sought. The character of cryst. orientation of the new structure is entirely identical with the deformed matrix. The characteristic feature of orientation caused by rapid heating is the closeness of the two basic orientations (112) and (111). With a high-recrystn. velocity a dispersion of the crystallites of the deformed matrix occurs around the basic (112) orientation, though only to a small angle. The origin of the (111) [101] orientation from the original (112) [110] can be conceived in the light of a 20° rotation around the 110 direction. Less expressed orientations (110) [110] and (110) [112] are located at 40° to the basic and at an angle of 55° between themselves, which, apparently, limits their development on rapid heating. J. D. Gat

Rafalovich, Ts. N.

USSR/Physics - Steel, Deformation texture FD-906

Card 1/1 Pub. 153-15/26

Author : Rafalovich, Ts. N.

Title : Deformation texture of pipes made of stainless and heat-resistant steel

Periodical : Zhur. tekh. fiz. 24, 1282-1287, Jul 1954

Abstract : Studies changes in deformation texture of pipes cold-drawn or cold-rolled out of 1Kh18N9T and Kh28 steels. The content of alloying elements in both steels predetermined the obtaining of alpha and gamma solid solutions at room temperature in the presence of chromium and titanium carbides. Illustrations; three references.

Institution : --

Submitted : July 30, 1953

Evaluation B-82733

RAFALOVICH, TS.N.

Recrystallization parameters in induction heating. Fiz.met. i metalloved. 2 no.2:259-269 '56. (MLRA 9:9)

1.Dneprepetrovskiy metallurgicheskiy institut imeni I.V.Stalina.
(Steel alloys--Heat treatment)

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18.8200

AUTHOR: Rafalovich, Ts.N.

TITLE: The Correlation Between Elements of Fine Crystalline Structure and Ductility of Steel at Raised Temperatures

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1960, Nr 5, pp 81 - 84

TEXT: The author investigated the correlation between the thin crystalline structure and changes in ductility of steel during deformation by hot and cold drawing of 30XГCA (30KhGSA) and 10 grade steel pipes. The experiments were carried out with the consultation of K.F. Starodubov. Prior to drawing the hot rolled pipes were subjected to induction heating directly on the draw bench up to the temperature of recrystallization annealing; after drawing they were water or air-cooled. The specimens were then subjected to X-ray examination according to methods developed by G.V. Kurdyumov and L.I. Lysak [Ref 2]. It is shown (Figure 1) that in hot drawing of 10 grade steel pipes considerable relaxation of stress takes place in spite of the short deformation period (about 0.2 sec). It can be admitted that the

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RAFALOVICH, TS.N., kand. tekhn. nauk.

Efficient temperature for hardening cold worked 1Kh18N9T steel.
Metalloved. i obr. met. no.12:69-72 D '57. (MIRA 11:1)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Steel--Heat treatment)

RAFALOVICH, Ts. N.

Category : USSR/Solid State Physics - Structure of Deformable Materials F-8

Abs Jour : Ref Zhur . Fizika, No 3, 1957, No 5752

Author : Rafalovich, Ts.N.
Inst : Dnepropetrovsk Metallurgical Institute, USSR.
Title : Recrystallization Parameters in Induction Heating

Orig Pub : Fiz. metallov i metallovedeniye, 1956, 2, No 2, 259-269

Abstract : Recrystallization parameters were studied microscopically in MS-10 low carbon steel. The deformation was performed by cold rolling hollow cylindrical specimens in several passages without intermediate annealing. The total deformation was 52%. The specimens were heated in a saltpeter bath and in an induction furnace. The average speed of heating in the saltpeter was 40°/minute and in induction heating 500°/second. The heating curves of the specimens were recorded with an oscillograph. At the higher heating speed, the recrystallization parameters at all temperatures exceed considerably the same parameters at the relatively low heating speeds. The maximum values of these parameters in

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RAFALOVICH, TS. N.

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The Recrystallization Texture of Cold Drawn Steels. Ts. N. Rafalovich. (*Fizika Metallov i Metallovedenie*, 1956, 1, (2), 325-331). [In Russian]. During the recrystallization treatment of steels the newly appearing grains possess an orientation identical with the deformed matrix within which they appeared. The main orientation of the crystals in the deformed texture of the matrix is maintained in the recrystallization texture, the degree, only, of the scattering around it is different.—L. E.

Rafalovich, Ts. N.

129-12-11/11

AUTHOR: Rafalovich, Ts. N., Candidate of Technical Sciences.

TITLE: Proper hardening temperature of the Steel 1X18H9T after deformation in the cold state. (Ratsional'naya temperatura zakalki kholodnodeformirovannoy stali 1Kh18N9T)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1957, No.12, pp. 69-72 (USSR)

ABSTRACT: During manufacture of wire, thin walled tubes and of some other semi-finished goods from the Steel 1X18H9T hardening from 1100 to 1150°C in water is applied for re-establishing the plastic properties of the metal after deformation in the cold state. Multiple repeated heating to such high temperatures involves considerable losses of time and increased costs. The here described investigations aimed to show that the temperature of intermediate hardening can be considerably reduced. The tests were made with steel containing 0.11% C, 17.8% Cr, 9.9% Ni, 0.5% Mn, 0.45% Si, 0.51% Ti, 0.03% S and 0.03% P. The deformation in the cold state was effected in three ways, namely, by rolling strip, by drawing tubes on a drawing bench and by rolling tubes in a pilger mill. The total reduction in all cases amounted to 55-60% and was achieved during several passes without intermediate heat treatment; all the specimens

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Proper hardening temperature of the Steel 1X18H9T after deformation in the cold state.

which were deformed in the cold state were hardened in water from various temperatures between 700 and 1200°C. The mechanical properties were determined from tensile tests of segments cut down from tubes. The changes in the structure of the metal and the deformation texture was established by X-ray methods of specimens cut out from strips and tubes and the specimens were ground and etched to a depth of 0.04 mm. The exposures were made in transmitted light applying a tube with a molybdenum anti-cathode utilising the following effects: the appearance of individual points on the interference rings which indicated formation of new crystals of sizes up to 5μ and the change in the blackening intensity along the interference rings caused by changes in the texture. The orientation of the crystals during heating and after deformation was determined by constructing pole figures which, according to earlier work of the author, yield adequately reliable results. In Fig.1 the changes in the mechanical properties of Cr-Ni steel deformed in the cold state as a function of the hardening temperature are

Proper hardening temperature of the Steel 1X18H9T after deformation in the cold state.

graphed and it can be seen from the data given in the Table, p.71, that the existence of a texture prior to deformation in one batch of the tested tubes affected the required pulling force during the first pass. The tests have shown that on heating 1X18H9T Cr-Ni steel, which was deformed in the cold state, the softening occurs whilst a perfect deformation texture is still in existence; the recrystallisation texture forming above 1000°C is less pronounced. In the process of multiple cold drawing of the steel 1X18H9T intermediate annealing should be effected at 900°C at which temperature the plasticity of steel becomes re-established to an adequate extent, although the deformation texture is still maintained.
There are 1 figure, 1 table and 6 references, all of which are Slavic.

ASSOCIATION: Dnepropetrovsk Metallurgical Institute.
(Dnepropetrovskiy Metallurgicheskiy Institut).

AVAILABLE: Library of Congress.

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RAFALOVICH, TS.

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Recrystallization Parameters during Induction Heating. Ts. M. Rafalovich. (*Fizika Metallov i Metallovedenie*, 1956, 2, (2), 259–269). [In Russian]. Experimental determination of recrystallization parameters (velocities of nuclei formation and crystal growth) for cold deformed low-carbon steel during rapid and relatively slow induction heating is described. Some special features of recrystallizations during rapid indyction heating are discussed.—V. G.

RAFALOVICH, Ts.N.

V13223* (Russian) Recrystallization Parameters in Induction Heating. Parametry rekristallizatsii pri induktsionnom nagreve. Ts. N. Rafalovich. *Fizika Metallov i Metallovedenie*, v. 2, no. 2, 1956, p. 259-269.

Determination of grain germination and grain growth rate in cold-worked low-carbon steel, in rapid induction heating and in relatively slow heating.

Metal

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